Ventilation in balance

TECHNICAL DATA

AML, AMP & CV RANGE

AIRMASTER

Our philosophy is that our products should be the most energy efficient on the market.

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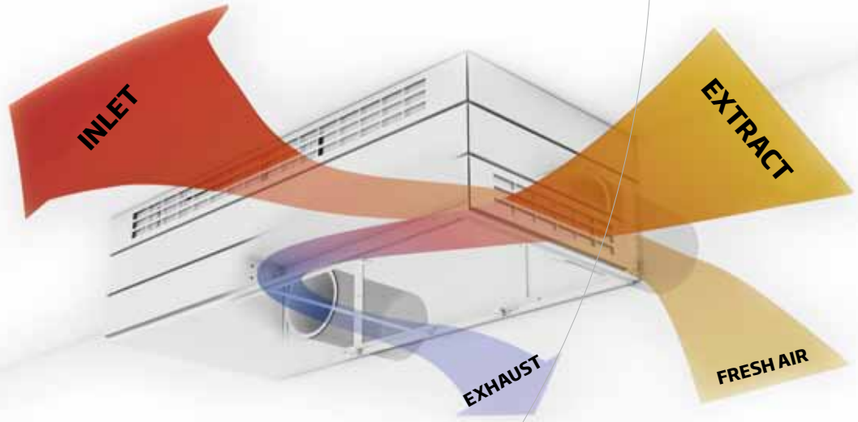


VENTILATION IN BALANCE

Fresh air is a human right. And that's why Airmaster has developed the most energy-efficient and quiet, decentralised ventilation solutions on the market with heat recovery - solutions which can be used in all types of rooms and buildings.

Airmaster's decentralised ventilation solutions keep energy consumption for ventilation and heating in a building to a minimum. Only those rooms where and when ventilation is needed are serviced. No wasted energy on unnecessary ventilation.

INTELLIGENT VENTILATION

LOW ENERGY CONSUMPTION WITH HIGH HEAT RECOVERY
The decentralised unit with heat exchanger is placed in the room close to an outer wall. The very short distance extracted air has to travel combined with the heat exchanger mean very low energy consumption. No need for long ventilation ducts, meaning minimum heat loss (transmission loss). Decentralised ventilation supplies an individual room without being difficult or expensive to install.

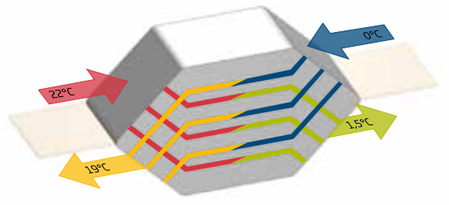
EFFICIENT EC MOTOR TECHNOLOGY
Airmaster uses energy-efficient EC motors, which give low energy consumption, flexible adjustment and silent operation.

HIGH HEAT RECOVERY
We use highly-efficient counterflow heat exchangers, and document temperature ratio in accordance with European standard DS/EN308[1], which is a dry temperature ratio, under conditions in which condensation of exhaust air does not occur. Airmaster's counterflow heat exchangers perform up to 85% measured as a dry temperature ratio in accordance with EN308, and up to 95% if condensation is included.

NO DRAUGHTS OR COLD AIR DISCOMFORT
Airmaster's decentralised ventilation units are all fitted with motor-controlled air dampers for the supply and exhaust air. When the unit is inactive, the motor-controlled damper is closed against direct air access. Cold outdoor air cannot pass through the unit into the room. Similarly, warm air cannot pass through to the outdoors.

MAJOR BENEFITS OF AIRMASTER SOLUTIONS

- Energy-efficient
- Low noise level: 30 dB(A)
- Cost-effective
- Quick and easy to install
- Efficient cooling module as option



1 Testing conditions:

Ambient temperature	5°C
Room exhaust temperature	25°C
Airflow test range	50-150% of nominal airflow
Internal or external leakage	<3% of nominal airflow. Supply and exhaust air is in balance.

AML & AMP SERIES

Both series consist of a range of decentralised ventilation units, which are particularly suited to commercial buildings and institutions.

CHOOSING THE RIGHT UNIT
The AML and AMP series are wall or floor mounted ventilation units. Both come in two models: horizontal and vertical, which indicates how the intake and exhaust are placed.

Both models permit air supply through the upper, middle or lower panels. Consequently, 1/3rd or 2/3rds of the unit can be integrated above a ceiling.

WALL-MOUNTED

HORIZONTAL MODEL
Intake and exhaust pass horizontally out of the unit and through an outer wall. A louvred grille is mounted on the facade side.

VERTICAL MODEL
Intake and exhaust pass vertically up through the roof. Roof caps and covers are used to terminate the duct.

WALL-MOUNTED AND PARTIALLY INTEGRATED

HORIZONTAL MODEL
Horizontal model with 1/3rd of the unit integrated into a ceiling.

VERTICAL MODEL
Vertical model with 1/3rd of the unit integrated into a ceiling.

HORIZONTAL MODEL
Horizontal model with 2/3rds of the unit integrated into a ceiling.

VERTICAL MODEL
Vertical model with 2/3rd of the unit integrated into a ceiling.

FLOOR-MOUNTED UNIT

Floor-mounted units can be placed along a wall, away from a wall or freestanding, e.g. as a room divider.

HORIZONTAL MODEL
Intake and exhaust pass horizontally through an outer wall.

VERTICAL MODEL
Intake and exhaust pass vertically up through the roof.

This floor-mounted unit can be placed against a wall and inlet at ground level (displacement) or at ceiling level (mixed).

Available as either a horizontal or vertical model.

HORIZONTAL MODEL
Intake and exhaust pass horizontally through an outer wall.

VERTICAL MODEL
Intake and exhaust pass vertically through the roof.

CV SERIES

The CV series is an energy-efficient decentralised ventilation unit, designed for homes.

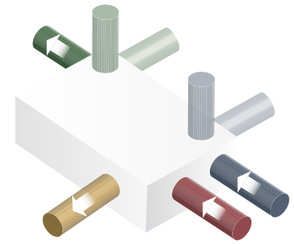
The units are compact ventilation solutions, with a low noise level, low energy consumption and flexible installation.

Inlet, extraction, intake and exhaust are housed in ducts, with short ducts carrying the air to and from one or more rooms.

CV 80 COMES IN TWO MODELS: R & L

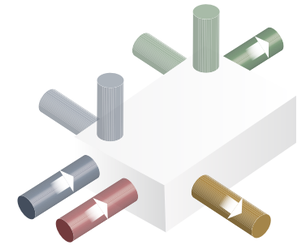
CV 80 R
Inlet, extraction and intake are placed on the right side of the unit. Exhaust is placed on the left side of the unit. The intake can also be placed three different places - either on the top, at the back or on the side.

The exhaust is always at the opposite end to the inlet, exhaust and intake. The exhaust can also be placed on the top, back or side.



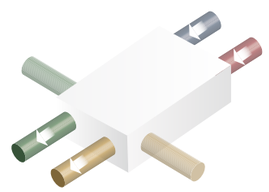
CV 80 L
Inlet, extraction and intake are placed on the left side of the unit. Exhaust is placed on the right side of the unit. The intake can also be placed three different places - either on the top, at the back or on the side.

The exhaust is always at the opposite end to the inlet, exhaust and intake. The exhaust can also be placed on the top, back or side.

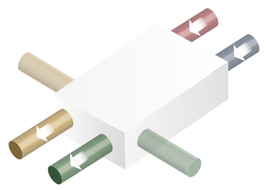


CV 200 COMES IN THREE MODELS: R, L & C

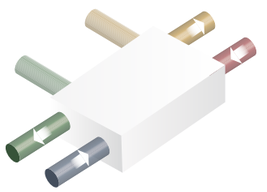
On the **CV 200 R**, inlet and exhaust are placed at the same end of the unit, with inlet on the right and exhaust on the left. Extraction and intake are on the opposite end.



On the **CV 200 L**, inlet and exhaust are placed at the same end of the unit, with inlet on the left and exhaust on the right. Extraction and intake are on the opposite end.



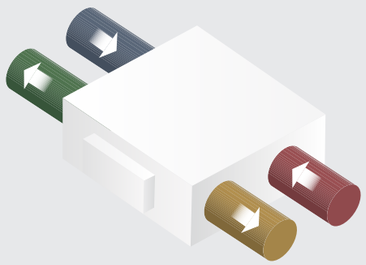
On the **CV 200 C**, inlet and extraction are placed at the same end of the unit, with inlet on the right and extraction on the left. Exhaust and intake are on the opposite end.



- Inlet
- Extraction
- Exhaust
- Intake

CV 1000

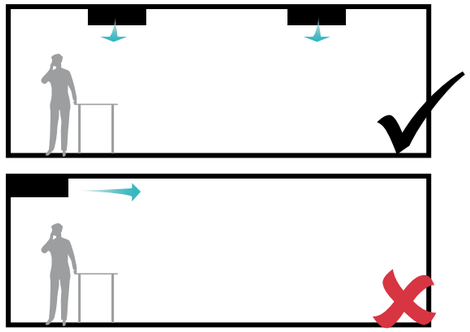
The **CV 1000** is available as this model, in which the intake and exhaust are at the same end, and inlet and extraction placed on the opposite end of the unit.



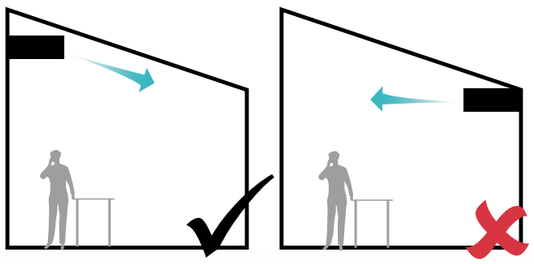
CORRECT **PLACING**

To get the full benefit of the Airmaster units, the units must be located correctly according to the physical geometry of the room.

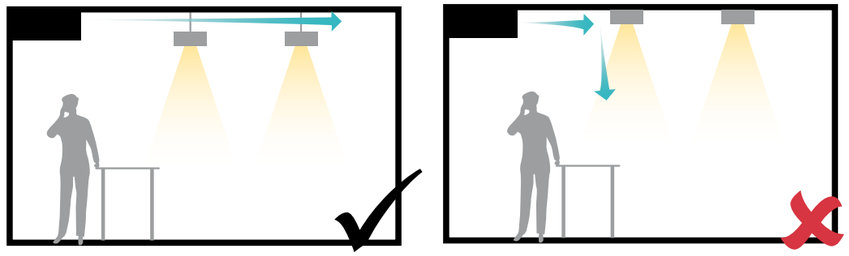
1 Two smaller units can be appropriate for a long, narrow room, where the throw length is too short longitudinally, yet too long laterally.



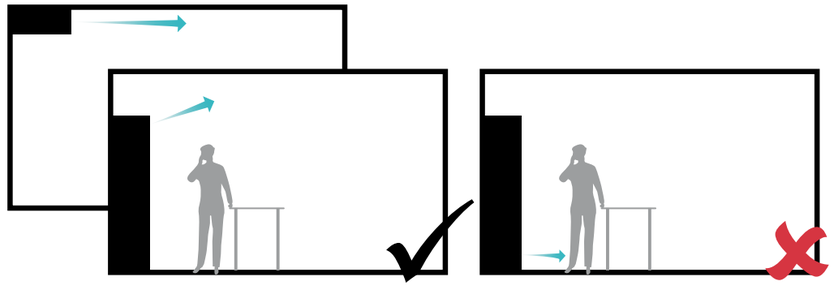
2 In a room with high or sloping ceilings, the units should be installed as high up as possible.



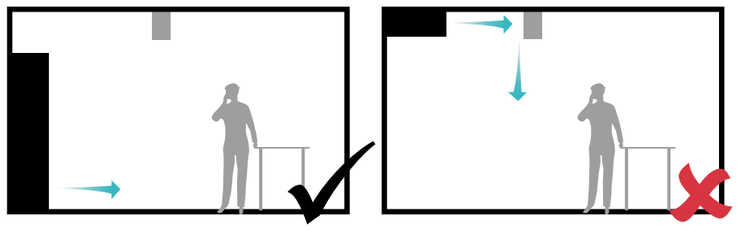
3 To achieve the most efficient supply conditions, objects, such as light fittings installed directly in the ceiling, should be avoided. Light fittings should be lowered so that the inlet has free access to the room.



4 Where people will be located in close physical proximity to a unit, it is important to use wall-mounted or floor-mounted models using the mixing principle as this avoids the occurrence of draughts.



5 If the room has ceiling beams that may obstruct the airflow, a floor-mounted unit that ventilates using the displacement principle (AMP 900) or a wall-mounted unit that ventilates along the room should be chosen.



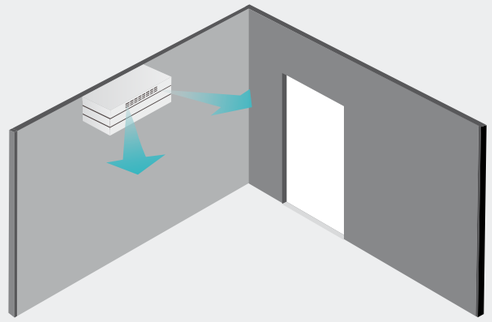
Correct selection and location of the unit ensures optimum inlet.

AIRMASTER'S **MIXING PRINCIPLE**

The fresh inlet tends to run along the ceiling, before slowly descending - known as the Coanda effect. The Coanda effect means that fresh air is mixed with ambient air and then slowly descends into the room.

INLET STREAM

The Coanda effect causes the stream to stick to the ceiling. Fresh air is impelled at a relatively high velocity into the ambient room air, ensuring efficient mixing of both. The meeting of impelled and ambient air ensures uniform air quality in the room, whilst reducing the velocity of the inlet stream. The result is a draught-free zone below ceiling height.



Wall-mounted Airmaster ventilation.

INLET FOR WALL-MOUNTED UNITS

The wall-mounted units all ventilate using the mixing principle where fresh air is supplied into the room near the ceiling using the Coanda effect.

Wall-mounted Airmaster ventilation with side view of inlet.

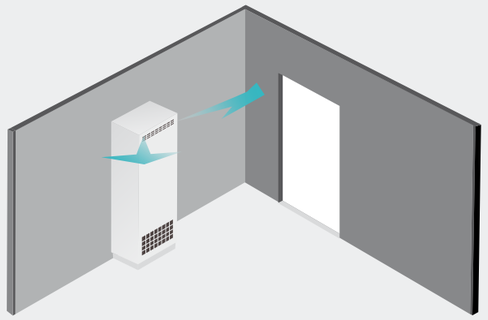
INLET FOR FLOOR-MOUNTED UNITS

The mixing principle is also used in Airmaster's floor-mounted models (AMP 900, AMP 1200) where fresh air is supplied upwards in order to achieve the coanda effect.

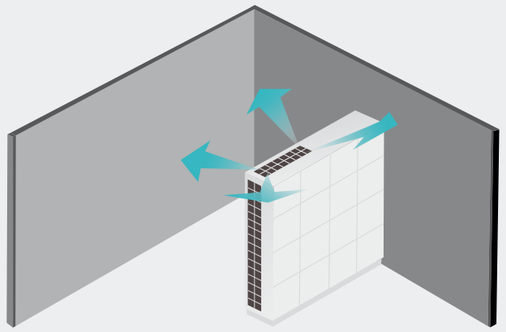
ADJUSTABLE SUPPLY

The floor-mounted models, AMP 900 and AMP 1200, are equipped with adjustable grilles. The grilles can be adjusted as required to ensure the right throw, depending on the size of the room. The throw can easily be adjusted by changing the grilles area/ direction.

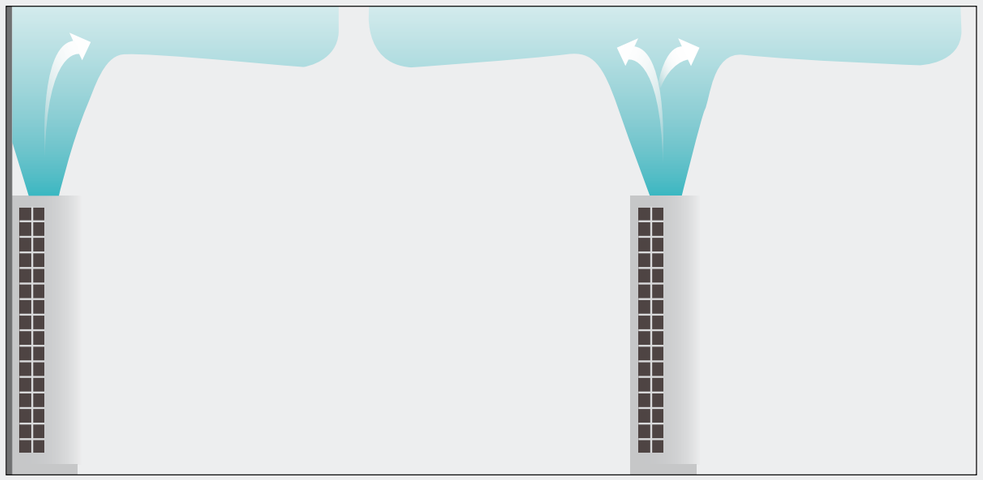
If the unit should need to be moved to another room, the grilles can simply be adjusted to the new room. The depth of the room determines how much the grilles needs to be adjusted.



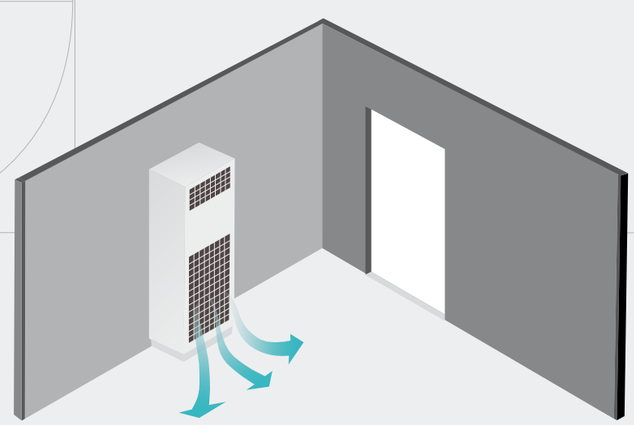
Floor-mounted AMP 900 – mixing ventilation.



Floor-mounted AMP 1200 placed perpendicular to the wall and used as a room divider. Airflow/ direction is set using adjustable grilles.



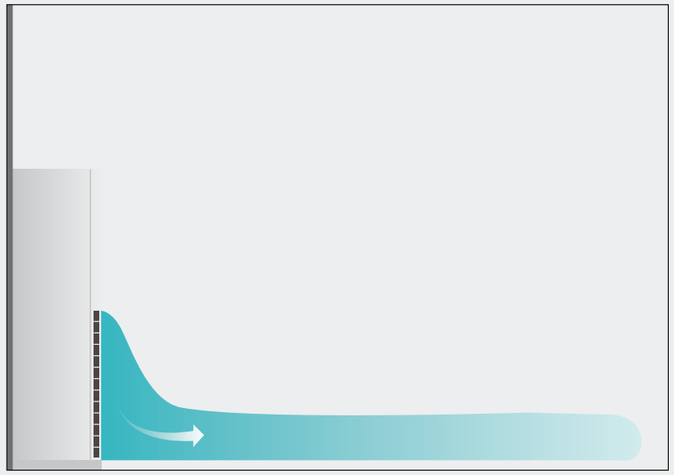
The illustration shows two floor-mounted AMP 1200s, one placed against the wall and the other placed perpendicular to the wall. The inlet viewed from the side.



Floor-mounted AMP 900 – displacement ventilation.

THE DISPLACEMENT PRINCIPLE

Airmaster's floor-mounted model AMP 900 is also available in a displacement model. With the displacement principle, the fresh air is supplied into the room at low speed at floor level and a couple of degrees lower than the temperature of the room. This means that the fresh air is distributed over the entire floor due to the difference in density between the cool and warm air. The low supply speed ensures that draughts do not occur.



Floor-mounted AMP 900 – displacement ventilation.

AIRLINQ
INTELLIGENT CONTROL

Airmaster focuses not only on the ventilation unit, but also on the control system software and operation.

Airmaster's overall control system consists of control software, a control box and control panel.

All Airmaster ventilation units are controlled by fully automatic, intelligent control system software – Airlinq. Airlinq allows full use of units directly after installation. All basic functions are pre-programmed by the factory.

The system is easy to set and program to individual requirements from customers or for local conditions. The software controls the options installed automatically, such as bypass, heating surfaces, cooler module and sensors (CO_2, humidity, movement etc.) whenever required.

The Airlinq control system is able to automatically counter high and low inlet temperatures, to ensure the room temperature set is maintained. Effective protection functions prevent the heat exchanger from icing up, drain off condensation and automatically stop the unit if necessary. Unnecessary damage to the unit is therefore prevented.

Airlinq's unique control functions:

DATA LOG
A new and unique function which logs all major operating and room data, e.g.:
- Inlet temperature
- Room temperature
- Outdoor temperature
- CO_2 level
- Air humidity
- Air volume
- Damper position

AIRLINQ PC TOOLS
Your unit can be monitored and adjusted from a PC, using the Airlinq User Tool.

Service engineers can use the more advanced Airlinq Service Tool.

DOWNLOAD TO PC
The unit's operating data can be downloaded to a PC to provide rapid overview of operation, and to generate operating documentation. This allows full optimisation of the unit.

ALL-IN-ONE
All intelligence is concentrated in the unit, which means that it can run fully automatically without having to be connected to a control panel.

MONITORING, WARNING AND ALARM SYSTEM
The advanced warning and alarm system helps minimise operating and service costs. Errors are quickly detected, making the unit more reliable.

FLEXIBILITY WITH DIGITAL BMS
Airlinq can be quickly fitted with a network module (optional PCB) to provide flexible connection to one of the following network systems:
- KNX®
- BACnet™/IP
- BACnet™ MS/TP
- LON®
- MODBUS® RTU RS485

AIRLINQ CTS
Up to 20 different and individually equipped ventilation units can be controlled using a single control panel in an Airlinq CTS. The system has a lot more features than the Master-Slave system in current use.

AIRMASTER SENSORS FOR BMS
Airmaster's movement sensor (PIR) and CO_2 sensors can be used on network systems. The result is very simple and inexpensive connection to a BMS system.

AIRLINQ L
CONTROL PANEL

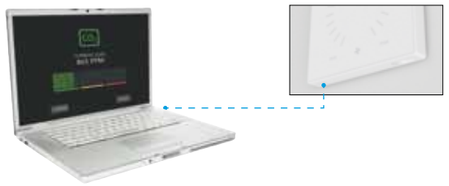
Control using Airlinq L is designed to be perfect for any requirement for optimal ventilation with minimal manual control.

THE EASIEST CONTROL INTERFACE ON THE MARKET
The control functions for Airlinq L are simple and easy to operate. Operation is automatic, and minimises the risk of incorrect use.

OPERATION VIA PC
The control panel can be connected to a PC via a USB port to set other operating parameters. Using the Airlinq User Tool or Airlinq Service Tool programs provides an overview of the ventilation unit's operations - see the following description of options for the two programs.

AIRLINQ L
is available for the following ventilation units:

AML 100
AML 300
AML 500
AML 800
CV 80
CV 200



Airlinq User Tool
The control panel can be easily connected to a PC, providing access to operating data using the Airlinq User Tool.

- Set air volume, inlet temperature and maximum room temperature.
- Download a data log and forward it via mail to an external recipient.
- Filter status display.
- Setting CO_2 range.
- Setting, activating and deactivating timer programs.
- Functions of the Airlinq P control panel are made available.

Airlinq Service Tool
The control panel can be easily connected to a PC, providing access to operating data using the Airlinq Service Tool.

- Set and program the control system
- Download a data log.
- Download or upload a control system setup.
- Update control system software.
- Automatic synchronisation of the built-in timer via PC date and time.

Airlinq User Tool and Airlinq Service Tool can be downloaded from **www.airmaster.dk/Airlinq**

CONTROL FUNCTIONS FOR AIRLINQ L

Manual start, stop and standby.

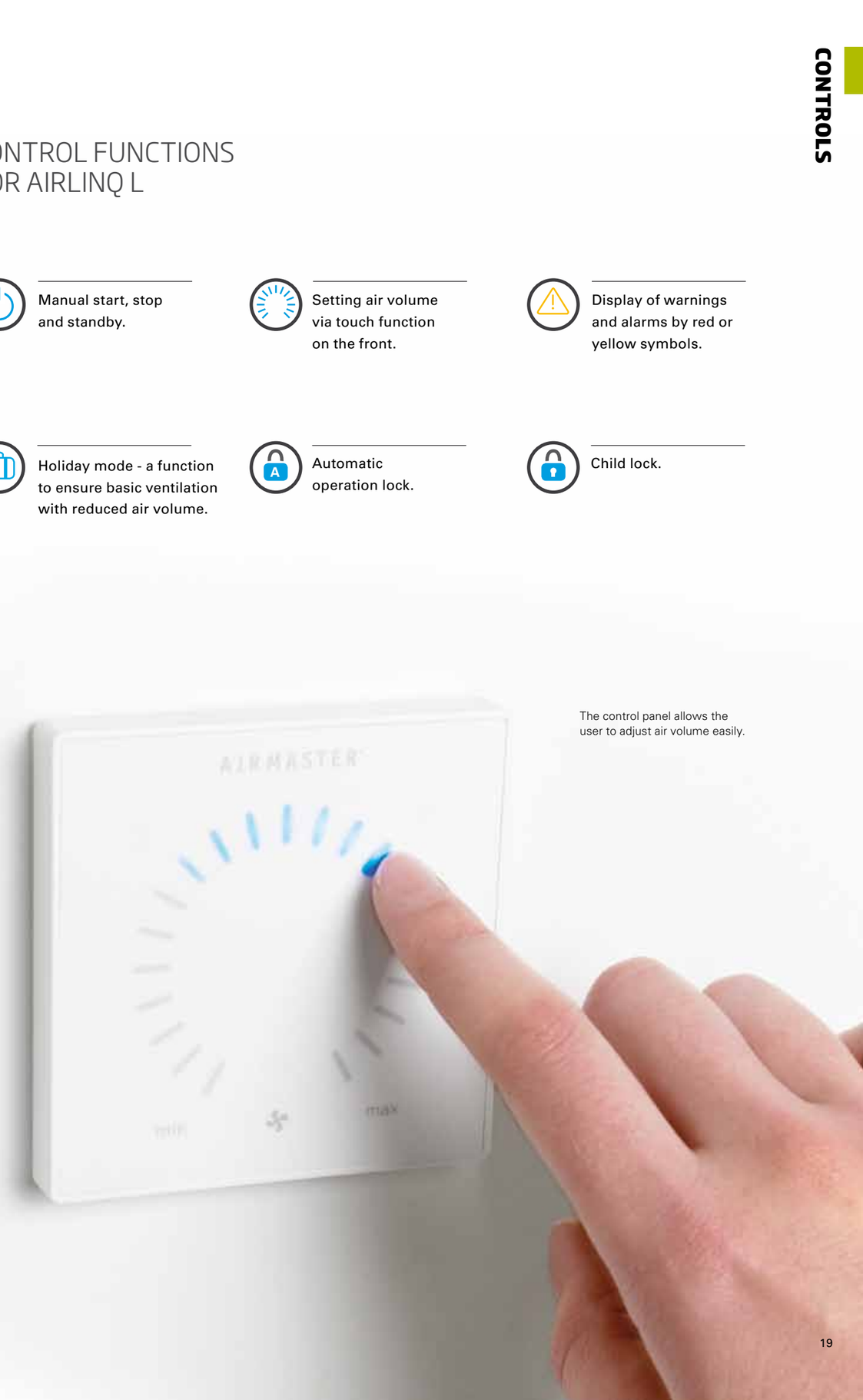
Setting air volume via touch function on the front.

Display of warnings and alarms by red or yellow symbols.

Holiday mode - a function to ensure basic ventilation with reduced air volume.

Automatic operation lock.

Child lock.



The control panel allows the user to adjust air volume easily.

L - CONTROL SYSTEM

The control functions for the L control system software are described below:

Data logging
- Continuous data log of all major operating data.
- A data log can be converted to a predefined period log.
- Log frequency and operating data can be adapted.
- The control system is set as default to log data every 5 minutes - the memory is big enough to collect data for 1 year. When the memory is full, the oldest data is overwritten to ensure access to the newest data. The advantages are:
  - Production of very accurate operating data, which can be used for identifying errors for example.
  - Generation of operating reports for each unit.
  - Documentation of air quality using a CO_2 sensor or electronic humidity sensor connected.

Monitoring
- Filter monitoring using an hour counter. Time interval can be adjusted.
- Condenser monitoring using a float contact.
- Electronic monitoring of sensors and ventilators.
- Advanced warning and alarm system. Breakdowns can thus be quickly detected, and ventilation becomes more reliable.

Timer control
Timed ventilation using 7 timer programs and built-in timer. Each timer program can be individually programmed with air volume, inlet temperature, days and times.

Control box
- The cooling module can be controlled via a supplementary PCB.
- Network connection via a supplementary PCB to KNX®, LON®, MODBUS®, BACnet™ MS/TP and BACnet™/IP is possible.
- All control system intelligence is housed in the control box. This allows ventilation unit operation without a control panel.
- The control panel is connected to a separate jack.

Night time cooling
Independent, automatic night time cooling. The program can be adapted to suit.

No draughts or cold air discomfort
- Automatic bypass control to maintain inlet temperature.
- Control of motorised damper.

Heating surfaces
- Automatic control of heating surface.
- Electronic frost protection using a pre- or comfort heating surface and the "Preheat" and "Virtual preheat" functions.

Analogue CTS
Control via analogue CTS possible, which controls operating hours and air volume or inlet temperature.

Energy meter
Monitoring of energy consumption for each unit, using a built-in energy meter with display.

Sensors
- On-demand air volume according to air humidity via electronic humidity sensors for outdoor and exhaust air, to ensure optimal air humidity indoors.
- On-demand air volume linked to CO_2 level, using a CO_2 sensor.
- Integrated 13.5 Volt power supply to sensors.
- 2 analogue inputs for external control signals:
  - Inputs can also be used as digital inputs.
  - Inputs can be programmed as required. The ventilation unit can thus be fully-automatically controlled using 2 dynamic sensors, 2 contact sensors or 1 dynamic and 1 contact sensor.

External Emergency Stop
Deactivation of the unit from an external signal independent of the unit's operating status and other start signals, e.g. in an emergency.
The unit will stop the ventilators immediately, and close the inlet and extraction dampers.

Airlinq L control panel

AIRLINQ P
CONTROL PANEL

Operation using Airlinq P is perfect when more comprehensive and easier access is required to control normal ventilation operation.

WIDE RANGE OF OPTIONS
Operating functions provide a wide range of options for controlling ventilation. The Airlinq P control panel with touch function makes it easy to navigate and set operating parameters. The menu layout makes operation easy and simple, and reduces the risk of error.

AIRLINQ P
is available for the following ventilation units:

AMP 300
AMP 500
AMP 800
AMP 900
AMP 1200
CV 1000

Operation

Settings can be made direct on the control panel touch screen.

Operation via PC

A PC can be connected via the USB port on the control panel, and Airlinq Service Tool used to set all operating parameters.

Airlinq User Tool and Airlinq Service Tool can be downloaded from **www.airmaster.dk/Airlinq**

Airlinq Service Tool
The control panel can be easily connected to a PC, providing access to operating data using the Airlinq User Tool.

- Set and program the control system
- Download a data log.
- Download or upload a control system setup.
- Monitor energy consumption using a built-in energy meter.
- Update control system software.
- Automatic synchronisation of the built-in timer via PC date and time.

CONTROL FUNCTIONS FOR AIRLINQ P

Manual start, stop and standby.
Manual start and stop of an individual group or entire system for Airlinq CTS.

Setting of all major operating parameters using an automatic startup guide.

Setting air volume via touch function on the front.

Displays warnings and alarms with text description (for all Airlinq CTS units).

Holiday mode - a function to ensure basic ventilation with reduced air volume.

Displays CO_2 level when a CO_2 sensor is connected (for each individual sensor in Airlinq CTS).

Easy, simple control of Airlinq CTS.

Automatic operation lock.

Screen lock with security code.

Set operating parameters:

- Display operating status for up to 40 operating parameters (for all units with Airlinq CTS)
- Overview and settings for all timed programs, including night time cooling.
- air temperature and standard air volume.
- Set date and time.
- Reset service log.
- Modify data log.
- Restart start-up guide to set all major operating parameters when customising an installation.

P - CONTROL SYSTEM

The control functions for the P control system software are described below:

Startup guide
An integrated startup guide ensures easy, quick programming during installation of the ventilation unit. The guide is integrated in the setup menu, and can be restarted at any time.

Data logging
- Continuous data log of all major operating data.
- A data log can be converted to a predefined period log.
- Log frequency and operating data can be adapted.
- The control system is set as default to log data every 5 minutes - the memory is big enough to collect data for 1 year. When the memory is full, the oldest data is overwritten to ensure access to the newest data.
  The advantages are:
  - Production of very accurate operating data, which can be used for identifying errors for example.
  - Generation of operating reports for each unit.
  - Documentation of air quality using a CO_2 sensor or electronic humidity sensor connected.
  - Reading energy consumption for each unit.

Control box
- Integrated cooling module control.
- Network connection via a supplementary PCB to KNX®, LON®, MODBUS®, BACnet™ MS/TP and BACnet™/IP is possible.
- All control system intelligence is housed in the control box. This allows ventilation unit operation without a control panel.
- The control panel is connected to a separate jack.

Monitoring
- The control system constantly monitors air volume, to ensure that the unit can always provide balanced ventilation regardless of counter-pressure.
- Filter monitoring using an hour counter and electronic flow monitoring. Time intervals can be adjusted.
- Condenser monitoring using a float contact.
- Electronic monitoring of sensors and ventilators.
- Advanced warning and alarm system. Breakdowns can thus be quickly detected, and ventilation becomes more reliable.
- Alarm output for remote monitoring of ventilation unit.

Timer control
- All timer controls are in the same menu and can run in parallel. This provides an overview of timed ventilation and night time cooling, plus easy, flexible adjustment of time control.
- Timed ventilation using 7 timer programs and built-in timer. Each timer program can be individually programmed with air volume, inlet temperature, days and times.

Night time cooling
Independent, automatic night time cooling. The program can be adapted to suit customer requirements.

No draughts or cold air discomfort
- Automatic bypass control to maintain inlet temperature.
- Control of motorised damper.

Heating surfaces
- Automatic control of pre- and comfort heating surfaces.
- Frost protection using "Virtual preheat" and comfort heating surface or "Preheat" with a pre-heating surface.

Analogue CTS
Control via analogue CTS possible, which controls operating hours and air volume or inlet temperature.

Energy meter
Monitoring of energy consumption for each unit, using a built-in energy meter with display.

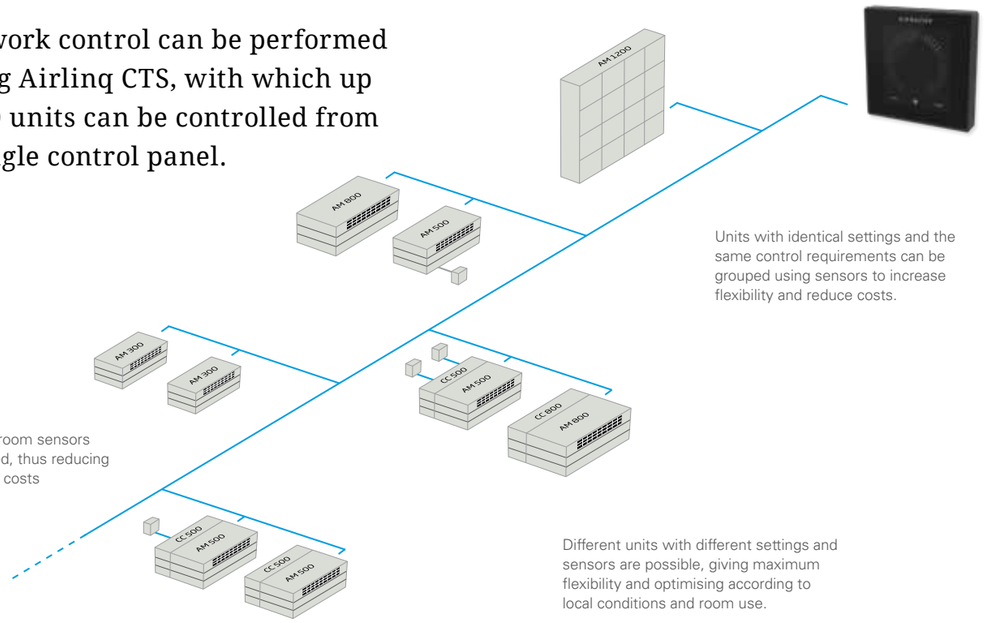
Sensors
- On-demand air volume linked to CO_2 level, using a CO_2 sensor.
- Integrated 12 Volt power supply to multiple sensors.
- Integrated 24 Volt power supply to single sensor.
- 3 analogue and 3 digital inputs for sensors.
  - Analogue inputs can also be used as digital inputs.
  - Inputs can be programmed as required. A ventilation unit can thus be fully automatically controlled using multiple dynamic and contact sensors.

External Emergency Stop
Deactivation of the unit from an external signal independent of the unit's operating status and other start signals, e.g. in an emergency.
The unit will stop the ventilators immediately, and close the inlet and exhaust dampers.

Airlinq P control panel

NETWORK
WITH AIRMASTER

Network control can be performed using Airlinq CTS, with which up to 20 units can be controlled from a single control panel.



Airmaster room sensors can be used, thus reducing installation costs

Units with identical settings and the same control requirements can be grouped using sensors to increase flexibility and reduce costs.

Different units with different settings and sensors are possible, giving maximum flexibility and optimising according to local conditions and room use.

AIRLINQ CTS

Flexibility is the order of the day for Airmaster's new Airlinq CTS system. CTS is short for Central Tilstandskontrol and Styringssystem (central status and control system).

Up to 20 different ventilation units can be controlled by the system from a single control panel. The units can be different types and with different accessories fitted. Cooling modules can also be attached to individual units as required. Such a degree of flexibility means that units with different levels of performance and accessories can be connected to a single system, whilst meeting the requirements of any individual room.

Dividing the system into groups of one or more units with a common control system optimises use of their size and sensors.

Control using a single sensor (e.g. CO_2 sensor) or a combination (e.g. a PIR and a CO_2 sensor) is also possible. Using sensors overrides the basic operating parameters for individual units, whole groups or all units.

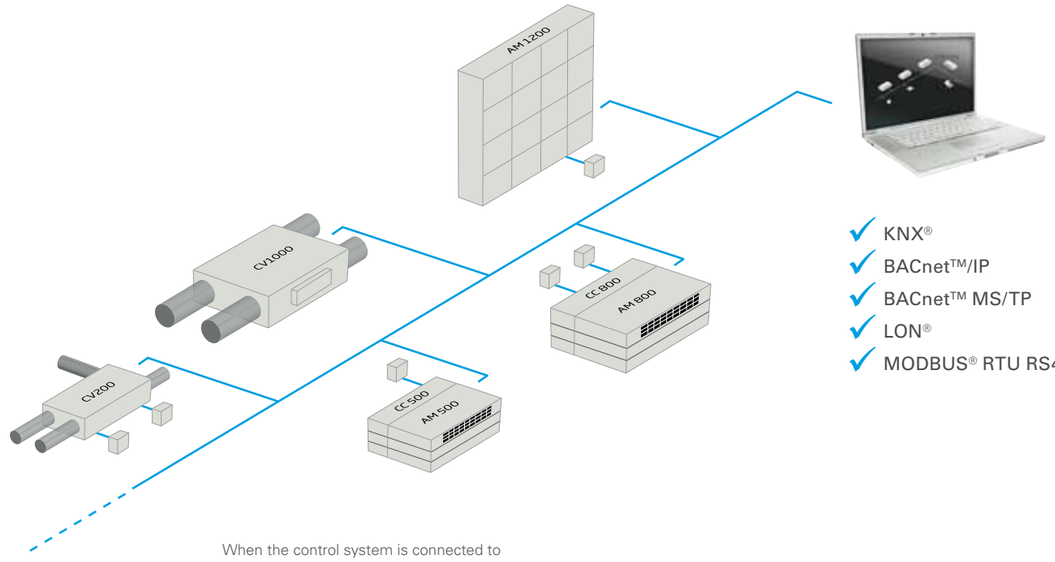
Individual operation, monitoring and programming - plus programming of common parameters - is performed from a single control panel. Connection to an analogue building network (BMS system) is of course also possible.

DIGITAL BMS

A BMS (Building Management System) network makes it possible to keep all the benefits of decentralised ventilation, whilst utilising the administrative benefits of central control.

Ventilation using Airmaster can be easily controlled from a PC and integrated with other building automation. A full overview of operation and temperature can be gained from a local PC, and the units can be programmed according to room use.

The units can also run fully automatically, but it can be monitored using a BMS network. Airmaster PIR and CO_2 sensors can be connected, for data from the units and sensors can be transferred to the BMS network. This reduces installation, operation and maintenance costs.



When the control system is connected to BMS, all individual ventilation units can be controlled and/or monitored by BMS.

- KNX®
- BACnet™/IP
- BACnet™ MS/TP
- LON®
- MODBUS® RTU RS485

CONTROL PROCESSES **WITH SENSORS**

To follow is a look at the different advanced control processes.

CONTROL VIA CO_2 SENSOR

A CO_2 sensor measures the CO_2 level in the room, and sends the reading to the control system. The control system then adjusts the rate of air replacement in the room according to the CO_2 level, reducing the unit's energy consumption to the minimum.

AIR VOLUME CONTROL (FIGURE 1)
The unit can be set to run with a reduced standard air volume (min.) for basic ventilation. If the CO_2 level in the room exceeds the programmed lower limit (A), the CO_2 sensor will cut in and increase air volume. If CO_2 levels continue to rise, the air volume will be increased linearly up to the maximum volume (max.) at the upper CO_2 limit (B) and above.

START, STOP AIR VOLUME CONTROL (FIGURE 2)
If the unit is completely controlled by the CO_2 sensor, it will start with a little more than the standard air volume (min. +x) when the CO_2 level exceeds the programmed lower limit plus 10% (A + 10%).

If CO_2 levels continue to rise, the air volume will be increased linearly up to the maximum volume (max.) at the upper CO_2 limit (B) and above.

If the CO_2 level falls below the programmed lower limit (A), the unit will stop again.

CO_2 SENSOR - WALL-MOUNTED OR BUILT-IN
automatically aligns the ventilation level to the CO_2 level in individual rooms.

FIGURE 1
AIR VOLUME CONTROL

FIGURE 2
START, STOP AND AIR VOLUME CONTROL

CONTROL VIA MOVEMENT SENSOR (PIR)

The ventilation unit is set to start/stop via a signal from a PIR sensor. The unit will start upon a signal from the PIR sensor, e.g. triggered by movement in the sensor zone. The unit will start in normal operation with the programmed air volume and inlet temperature. When the signal ceases, the unit will stop after the prepro-grammed run-on time. PIR control is often used to activate full operation on units which provide basic ventilation when there is no-one present.

A PIR/MOVEMENT SENSOR ensures the lowest energy consumption possible, as ventilation only starts when there is movement in the room. Variable run-on time can be programmed in the Airlinq control system.

We supply units all over Europe. Consequently, we know that our units have to function effectively under very different outdoor temperatures - ranging from -25°C and up to 35°C.

CONTROL PROCESSES

DEALING WITH CONDENSATE

When heat recovery is running up to 95%, the exhaust air is cooled considerably in the counterflow heat exchanger. The humidity in exhaust air can then condense in the heat exchanger, and is collected in a condensate tray.
A float registers a high level of condensate in the tray automatically. To prevent stoppages, a drain can be fitted to the condensate tray to remove water from the unit. Alternatively, the ventilation unit can be fitted with a condensate pump to pump condensate away when it forms.

FLOAT SENSOR
Built-in float sensor detects unwanted build-up of condensate.

CONTROL VIA A HYGROSTAT

WALL-MOUNTED HYGROSTAT
A wall-mounted hygrostat registers relative air humidity, and sends either a start or stop signal to the ventilation unit. The hygrostat is used to set the level of relative air humidity at which the signal is given. The hygrostat contains hygroscopic carbon fibres, the length of which depend on relative air humidity. When the relative air humidity goes over or under the level set, the hygrostat sends a start/stop signal to the ventilation unit. This is often used to activate full operation on units which otherwise provide basic ventilation, when the relative air humidity setting is exceeded.

HYGROSTAT ensures that humidity is automatically kept down. Can be installed in the room or on the unit.

BUILT-IN ELECTRIC HUMIDITY SENSOR
It should be possible to regulate ventilation according to demand (demand response) depending on the air humidity in homes, which is why CV 80 and CV 200 are both available with automatic humidity control.

A high concentration of CO_2 in a classroom is an indication of human activity, and the need for fresh air. Similarly, an increased level of air humidity in the home is an indication of the need for more ventilation. Humidity is a better indicator in homes. Naturally, there is nothing to prevent you having several types of regulation, e.g. via humidity, temperature, CO_2, PIR and VOC.

Relative humidity is highly dependent on the weather. For instance, aiming for a relative humidity level of 45% inside the home is a waste of time if the level is 60% outdoors. That would simply mean that the unit will run at full power all summer, or at minimum power all winter. That is not demand response.

Airmaster decided to make it possible to implement an extra humidity sensor as an option for CV 80 and CV 200. The extra sensor reacts according to the difference between outdoor and indoor humidity - i.e. between absolute humidity, and not relative humidity. That means that the amount of humidity supplied to the air inside the home is registered. Demand response regulation of the air volume is proportional between two SET points, a minimum and maximum. This form of operation saves considerable energy.

FROST PROTECTION

When the outdoor temperature approaches freezing point, the exhaust temperature behind the counterflow heat exchanger drops. This can result in condensate freezing in the heat exchanger. The Airlinq control system prevents the formation of ice by increasing exhaust air and reducing inlet, causing the exhaust temperature to rise again. If this process is insufficient to prevent ice forming in the heat exchanger, Airlinq will protect the unit by shutting down operation.

"PREHEATING"
WITH ELECTRIC PREHEATER
If the ventilation unit is fitted with an electric preheater, it will heat the outdoor air before it meets the counterflow heat exchanger, preventing the formation of ice. To maintain balance ventilation, the Airlinq control system controls the temperature in the unit. It does so by the heater being connected when needed and keeping energy consumption to a minimum.

"VIRTUAL PREHEAT"
WITH ELECTRIC COMFORT HEATER
Alternatively, ice formation can be prevented using a high capacity electric comfort heater. A bypass damper diverts some of the outdoor air past the counterflow heat exchanger. The comfort heater heats the outdoor air to the inlet temperature required. The exhaust air is cooled down less in the heat exchanger, preventing ice formation. This process can also be taken over by a water heating surface. There are more details in the following section on comfort heaters.

ELECTRIC PREHEATER
Optional preheater for very cold areas.

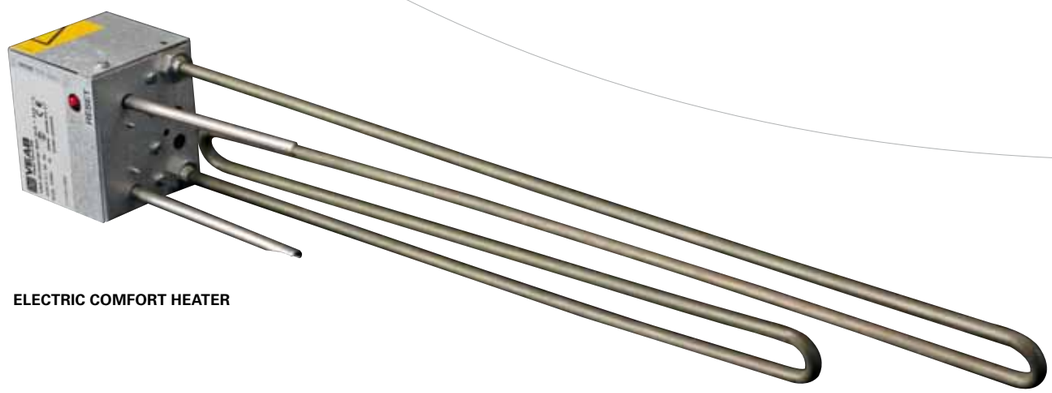
CONTROL PROCESSES **WITH HEATERS**

CONTROLLED INLET TEMPERATURE

To achieve the highest level of heat recovery, Airmaster ventilation units are fitted with highly-efficient counter-flow heat exchangers. A comfort heater (which can be fitted to all Airmaster units) is therefore only used to align minimal heat loss with ventilation. Balanced ventilation is maintained as long as the inlet temperature remains within acceptable limits as standard.

Without comfort heater: If the inlet temperature cannot be maintained, Airlinq will reduce inlet and increase exhaust air to compensate for a low outdoor temperature. The function is also active if comfort heater capacity is utilised 100%. The balance between supply and exhaust air, plus a draught-free zone, is maintained via a comfort heater. The same applies in the event of extremely low outdoor temperatures.

ELECTRIC COMFORT HEATER
An electric comfort heater heats the inlet after the counterflow heat exchanger to the inlet temperature set if needed. The Airlinq control system controls the temperature in the unit, and automatically activates the comfort heater if it is needed. A high capacity comfort heater fitted to a ventilation unit will simultaneously take over the role of a preheater. Refer also to "Frost protection via "Virtual preheater" with electric comfort heater" on page31.

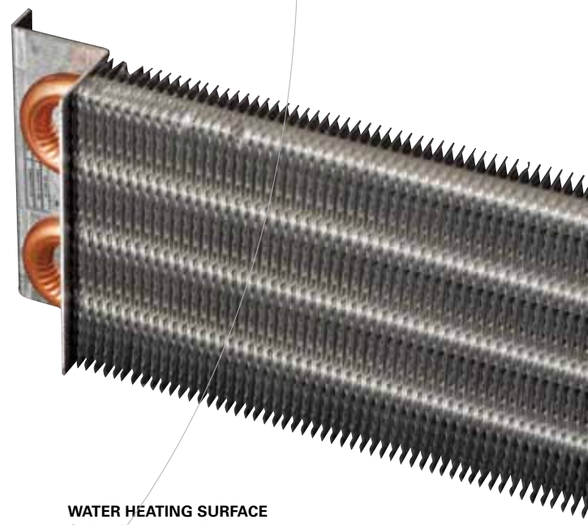


ELECTRIC COMFORT HEATER

WATER HEATING SURFACE
Most ventilation heaters can have a water heating surface fitted as an alternative to an electric comfort heater. This will also ensure the desired inlet temperature. The large surface area of the heater ensures efficient transfer of heat energy to the inlet.

The Airlinq control system starts and stops the heater using a motor-driven valve. The heater is supplied built-in to the ventilation unit, or as part of the duct system. Connection to the local heating system is therefore quick and simple.

FROST PROTECTION OF WATER HEATING SURFACE
The water heating surface is fitted with a separate, self-controlling heat retention valve, which ensures a minimum temperature even when the ventilation unit is switched off. All nominal values for the water heating surface are preprogrammed into the Airlinq control system to ensure it is protected against frost, and always functional.



WATER HEATING SURFACE
Optional water-carrying comfort heater.

ENERGY METER

All Airmaster ventilation units can be fitted with an energy meter, to provide a precise overview of the unit's electricity consumption. The figures can be read directly on the meter's display. Consumption on units with the P control system can also be read on PC using Airlinq Service Tool.

CONTROL PROCESSES **FOR COOLING**

Airmaster's comfort-creating cooling module for horizontal models completes the most flexible ventilation system on the market.

AUTOMATIC BYPASS

If the inlet temperature exceeds the level set, the Airlinq control system will gradually open the bypass. Cooler outdoor air will be allowed to bypass the counterflow heat exchanger, ensuring that the inlet temperature set is maintained.

Airlinq will adjust the inlet temperature to achieve a higher cooling effect. If the room temperature exceeds the level set, e.g. as a result of strong sunshine, the bypass will open automatically.

If a cooling module is fitted to the ventilation unit, Airlinq will activate it automatically if cooling using outdoor air is insufficient. When the cooling module is working, the bypass is still used to regulate the inlet temperature.

NIGHT TIME COOLING

If the room temperature exceeds the maximum level set during the day, all Airmaster ventilation units can automatically cool down the room using colder night air. We call this function "night time cooling". It will be registered by the Airlinq control system, and started automatically. If necessary, the function will use the bypass damper and cooling module to achieve the cooling effect required. The building and its contents will be cooled, and room temperature will reach a lower level than otherwise obtainable.

COOLING USING THE COOLING MODULE

The automatic bypass function and night time cooling ensure that the inlet and room temperature are kept down. If this is insufficient, effective temperature reduction can be achieved using a cooling module. Airlinq automatically activates the cooling module, which reduces the outdoor air's temperature by up to 15°C. Outdoor air is then supplied to the ventilation unit, enabling the inlet temperature to be maintained using the automatic bypass function at the level set.

CC COOLING MODULE
is available for the following ventilation units:

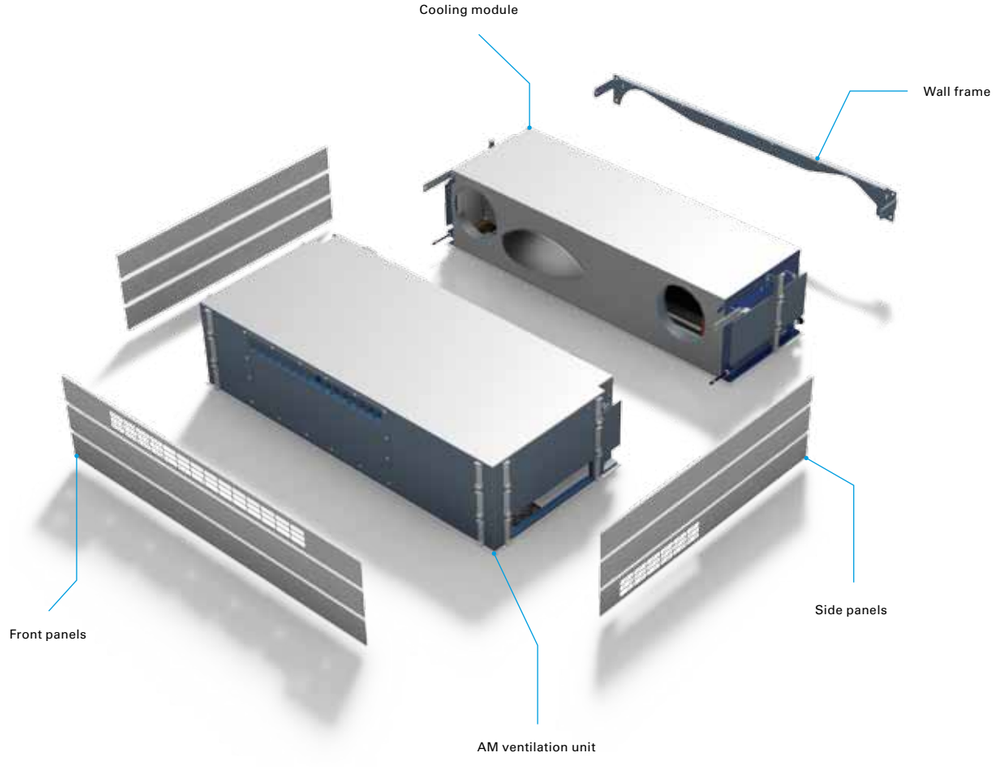
AMP 300 H
AMP 500 H
AMP 800 H

SPECIALLY-DEVELOPED COOLING MODULE

Airmaster's specially-developed cooling modules (CC) are controlled fully automatically by Airlinq. Combined with 5 different network modules (LON®, MODBUS® RTU RS485, BACnet™ MS/TP, BACnet™/IP, KNX®) and the intuitive control panels, Airlinq provides an efficient, economic and long-term ventilation solution.

The cooling module is designed to reduce the outdoor air temperature by up to 15°C. The units are dimensioned according to European conditions (outdoor temperature 35°C, 40% relative humidity) according to standard DS/EN 14511-2. The cooling module is exempt from the directive for pressure equipment (PED) according to article 1, part 3.6.

A condensate pump is built in as standard equipment for all cooling modules.



The ideal unit for small rooms such as offices for one or two people etc. The low noise level ensures that the unit is not noticeable.

AML 100

TECHNICAL DATA

Max. capacity at 30 dB(A)	75 m³/h
Max. capacity at 35 dB(A)	100 m³/h
Throw (0,2 m/s)	3.5 m at 75 m³/h
	5.5 m at 100 m³/h
Electrical connection	1 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø125 mm
Weight	42 kg
Heat exchanger	Countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	Panels RAL 9010 (white)
Current at 30 dB(A)	0.15 A
Supply cable	1.5 mm²
Max. power consumption at 30 dB(A)	18.5 W
Max power consumption at 35 dB(A)	25.5 W
Leakage current	≤ 1 mA

ELECTRIC COMFORT HEATING SURFACE (OPTION)

Electrical connection, internal	1 x 230 V
Heating capacity	500 W
Thermal cut-out, aut. reset	70°C
Thermal cut-out, man. reset	120°C

STANDARD AND OPTIONS	AML 100 V	AML 100 H
Bypass	x	x
Electric preheating surface	–	–
Electric comfort heating surface	•	•
Water heating surface (comfort heating)	–	–
CO_2-sensor (wall-mounted)	•	•
CO_2-sensor (integrated)	•	•
PIR/motion sensor	•	•
Hygrostat	•	•
Condensate pump	•	•
Cooling module	–	–
Motorised exhaust damper	x	x
Motorised main damper	x	x
Countercurrent heat exchanger (alu)	x	x
Energy Meter	–	–

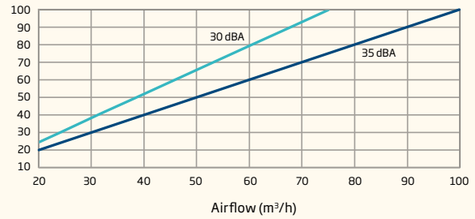
x : standard • : option – : not available

The AML 100 is the smallest of our decentralised ventilation units with heat recovery. The AML 100 is dimensioned for an air volume of up to approx. 100 m³/h at a noise level of just 35 dB(A) at 1 metre's distance, making it perfect for ventilation in smaller rooms, such as small offices and the like.

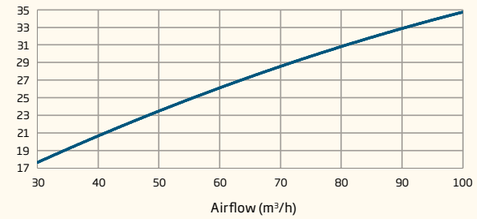
The AML 100 is also available with an F7 fresh air filter. Use of the F7 fresh air filter provides balanced ventilation thanks to parameter adjustment. The F7 fresh air filter also reduces maximum air volume by around 5%.

AML 100

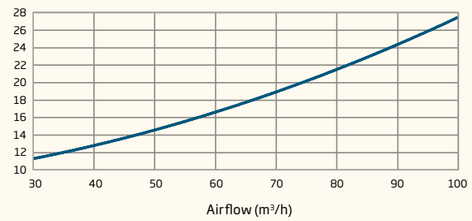
CAPACITY (%)



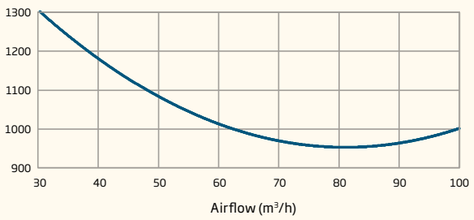
SOUND PRESSURE LEVEL (dB(A))



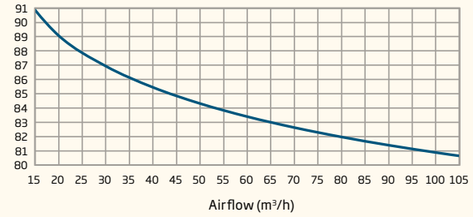
POWER CONSUMPTION (W)



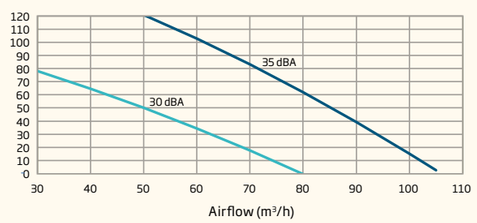
SFP W/(m³/s)



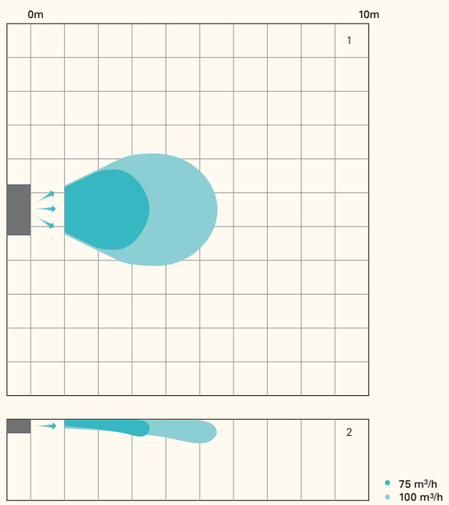
TEMPERATURE EFFICIENCY (%)



EXTERNAL PRESSURE DROP (Pa)



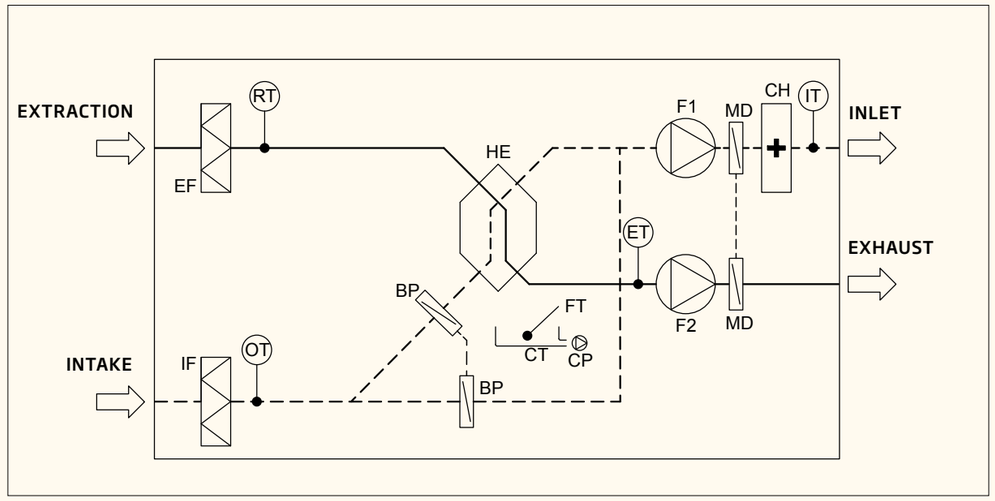
THROW (0,2 m/s)



The Airmaster units provide different air throw lengths depending on inlet volume. The blue tones on the illustration on the left show the airflow at different throws.

[1] Throw viewed from above
[2] Throw viewed from the side

SCHEMATIC DIAGRAM - LEFT



Name of component

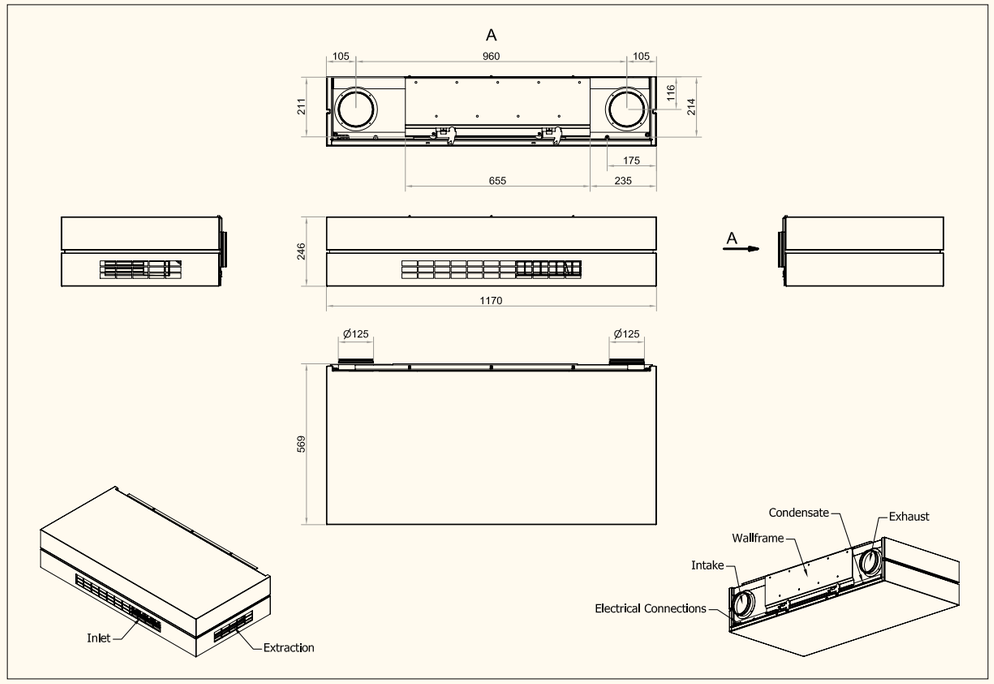
F1	Inlet fan
F2	Exhaust fan
IF	Fresh air filter
EF	Exhaust air filter
MD	Main damper (motorised)
BP	Bypass damper
HE	Countercurrent heat exchanger
CT	Condensate tray
CP	Condensate pump
FT	Float
RT/FL	Room temperature sensor/flow sensor
OT	Outdoor temperature sensor
ET	Exhaust temperature sensor
CH	Comfort heating surface
IT	Inlet temperature sensor

EPP CONSTRUCTION

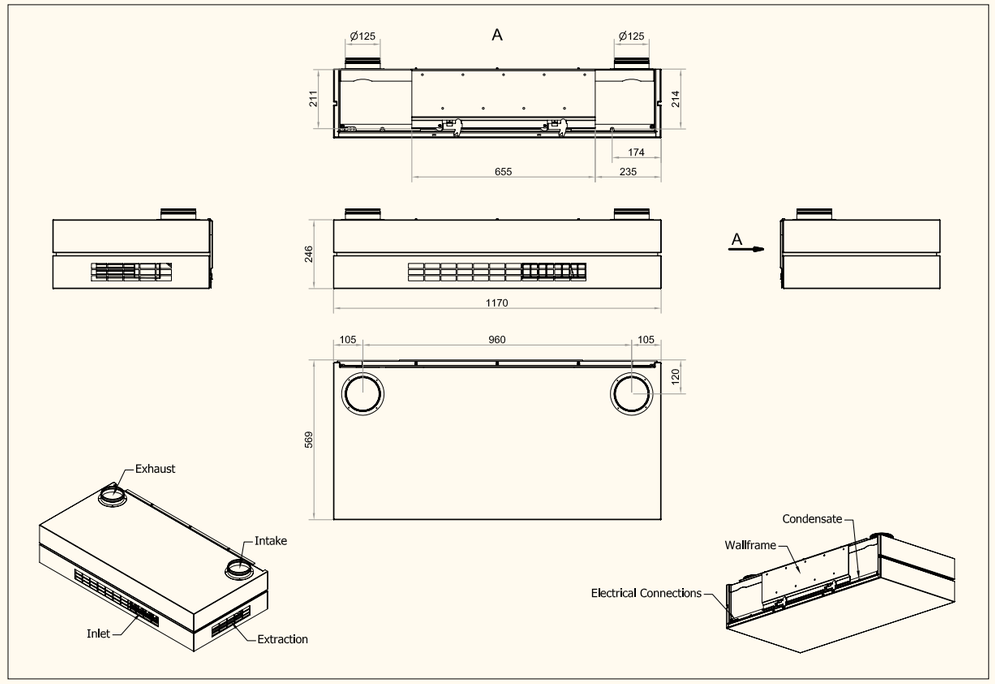
The AML 100 consists of a complete EPP construction. All unit parts and components are fitted in or on the moulded EPP sections, which provide perfect insulation against heat loss.

AML 100

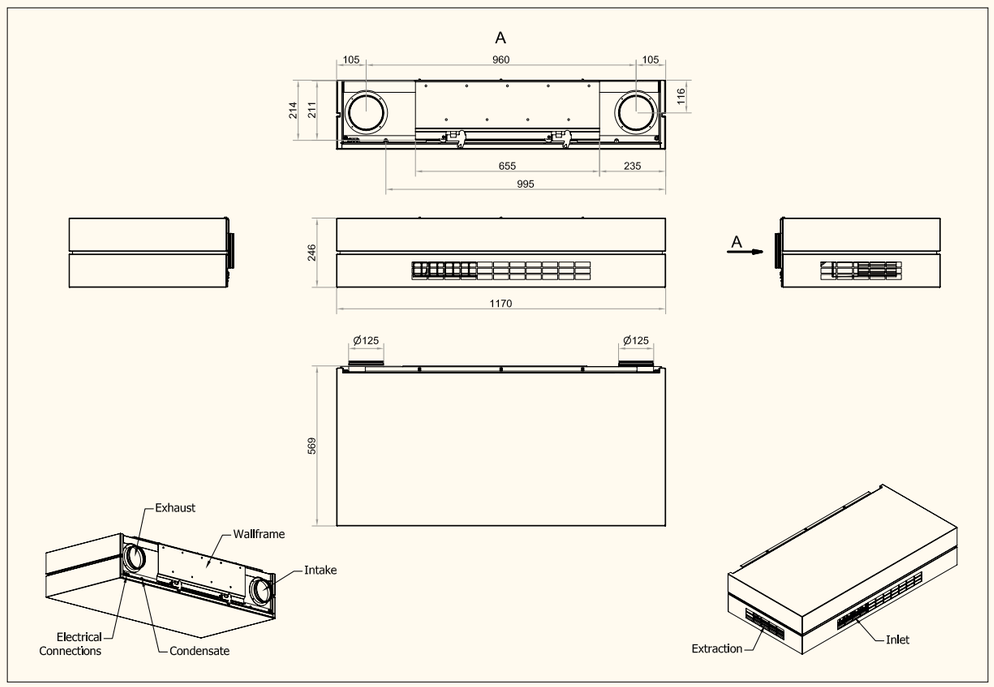
AML 100 HR



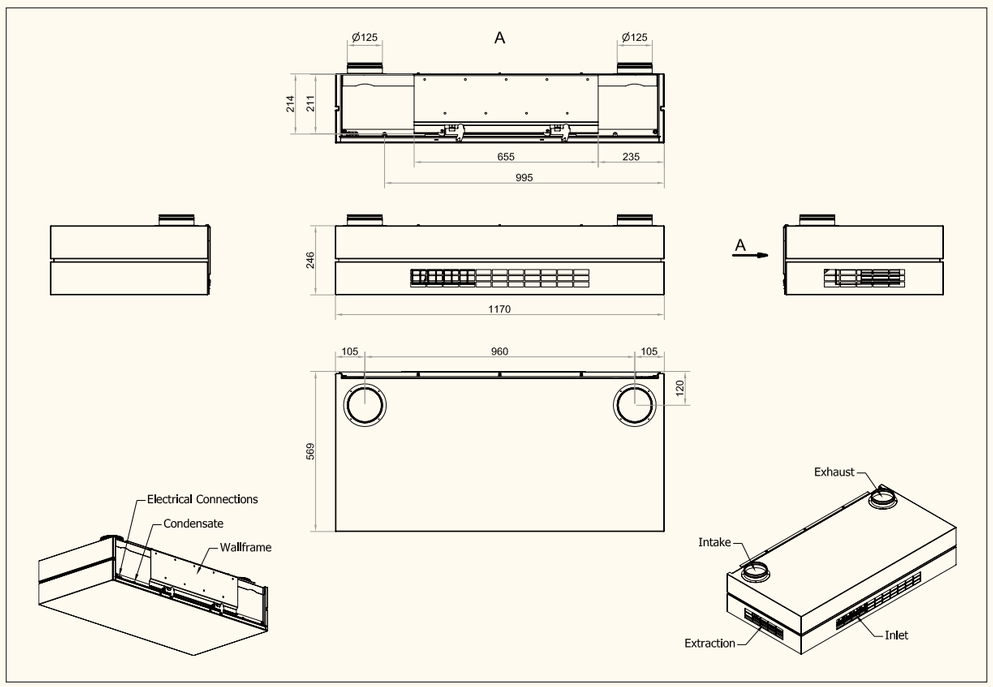
AML 100 VR

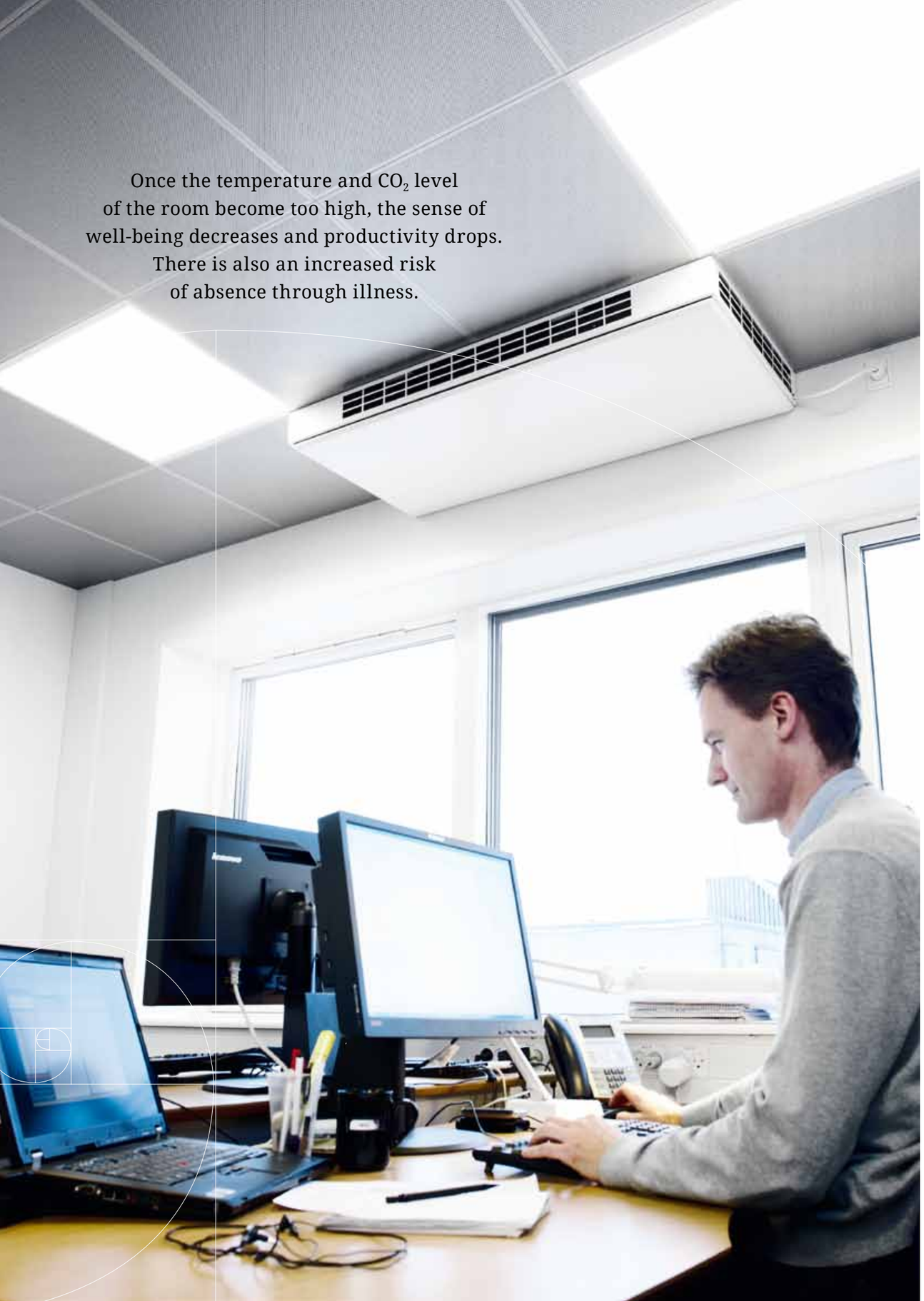


AML 100 HL



AML 100 VL





AML 300 / AMP 300

TECHNICAL DATA

Max. capacity at 30 dB(A)	240 m³/h
Max. capacity at 35 dB(A)	300 m³/h
Throw (0,15 m/s)	4.8 m at 160 m³/h
	5.7 m at 220 m³/h
	6.5 m at 300 m³/h
Electrical connection	1 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø200 mm
Condensate drain	Ø16 mm
Weight	49.8 kg
Heat exchanger	Countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	Panels RAL 9010 (white)
Current	0.6 A
Supply cable	1.5 mm²
Max. power consumption	100 W
Leakage current	≤ 3 mA

This ventilation unit is ideal for office buildings and institutions.

A Virtual Preheater (VPH) can be used. VPH uses a bypass to divert some of the cold outdoor air past the heat exchanger and directly to the heating element. This protects the unit against frost, even at very low temperatures.

A cooling module can be connected (see page35).

Ducts can also be connected for extraction or inlet.

WATER HEATING SURFACE (OPTION)

Max. operating temperature	90°C
Max. operating pressure	10 bar
Heating capacity	343 W*
Pipe connection	3/8" (DN 10)
Material of pipes/louvres	copper/aluminium
Opening/closing time, motorised valve	< 60 s

* Capacity at: supply/return temperature 60/40°C, water volume 15 L/h

ELECTRIC COMFORT HEATING SURFACE (OPTION)

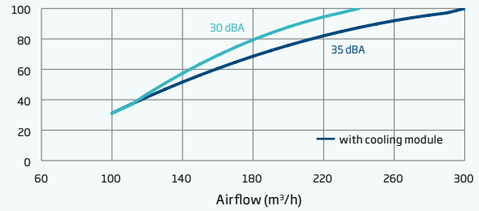
Electrical connection, internal	1 x 230 V
Heating capacity	1500 W
Thermal cut-out, aut. reset	70°C
Thermal cut-out, man. reset	120°C

STANDARD AND OPTIONER	AML 300 V	AML 300 H	AMP 300 H
Bypass	•	•	•
Electric preheating surface	–	–	–
Electric comfort heating surface	•	•	•
Water heating surface (comfort heating)	•	•	•
CO_2-sensor (wall-mounted)	•	•	•
CO_2-sensor (integrated)	•	•	•
PIR/motion sensor	•	•	•
Hygrostat	•	•	•
Condensate pump	•	•	•
Cooling module	–	–	•
Motorised exhaust damper	–	–	–
Motorised main damper	x	x	x
Countercurrent heat exchanger (alu)	x	x	x
Capacitive return for motor-driven main damper	–	–	–
Energy Meter	•	•	•

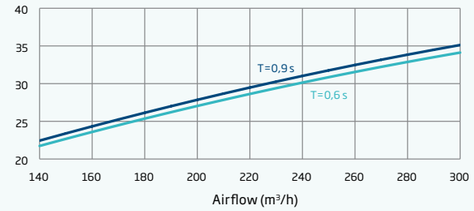
x : standard • : option – : not available

AML 300 / AMP 300

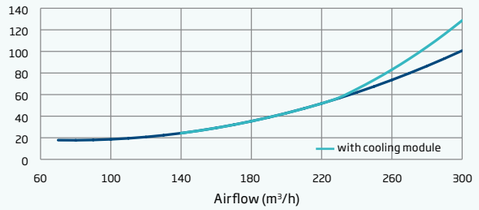
CAPACITY (%)



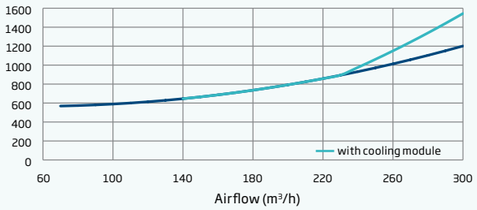
SOUND PRESSURE LEVEL (dB(A))



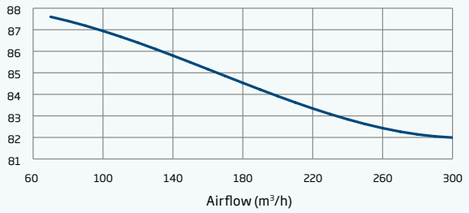
POWER CONSUMPTION (W)



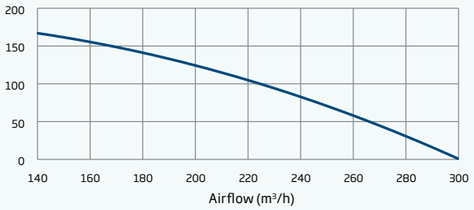
SFP W/(m3/s)



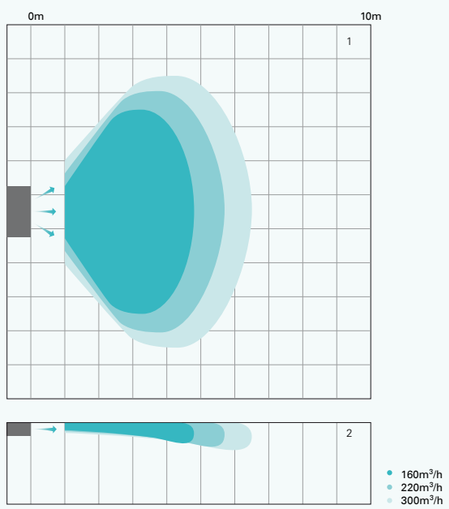
TEMPERATURE EFFICIENCY (%)



EXTERNAL PRESSURE DROP (Pa)



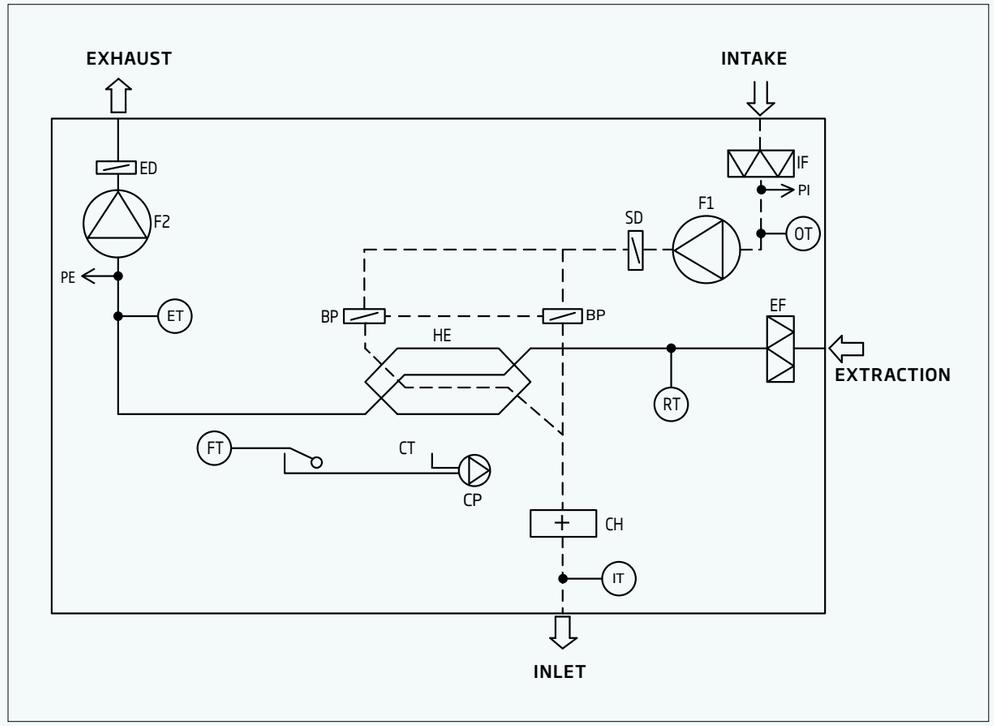
THROW (0,15 m/s)



The Airmaster units provide different air throw lengths depending on inlet volume. The blue tones on the illustration on the left show the airflow at different throws.

[1] Throw viewed from above
[2] Throw viewed from the side

SCHEMATIC DIAGRAM

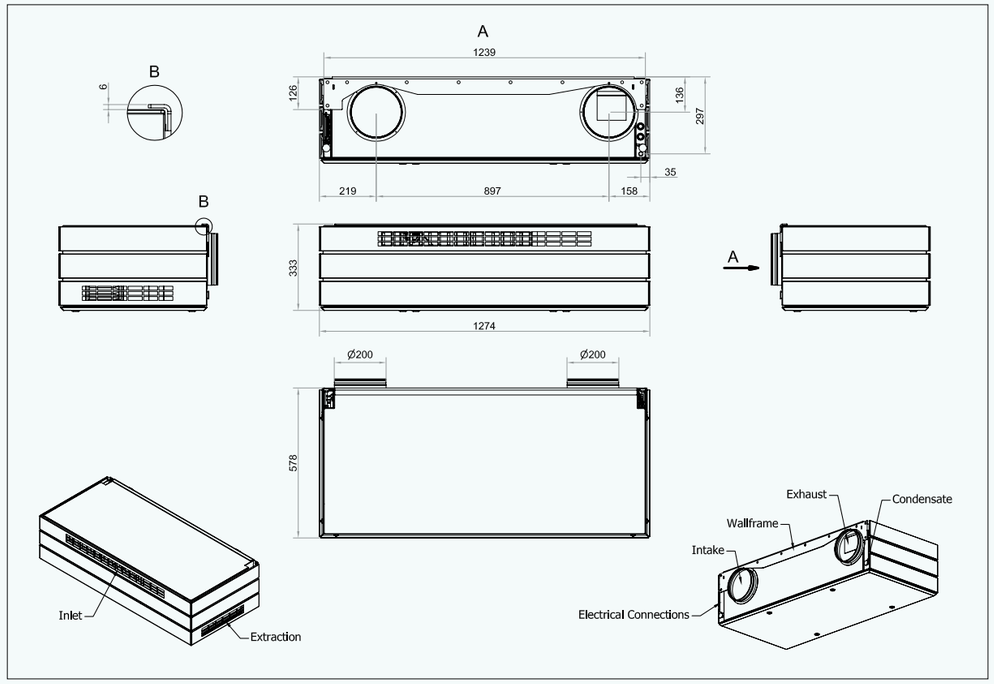


Name of component

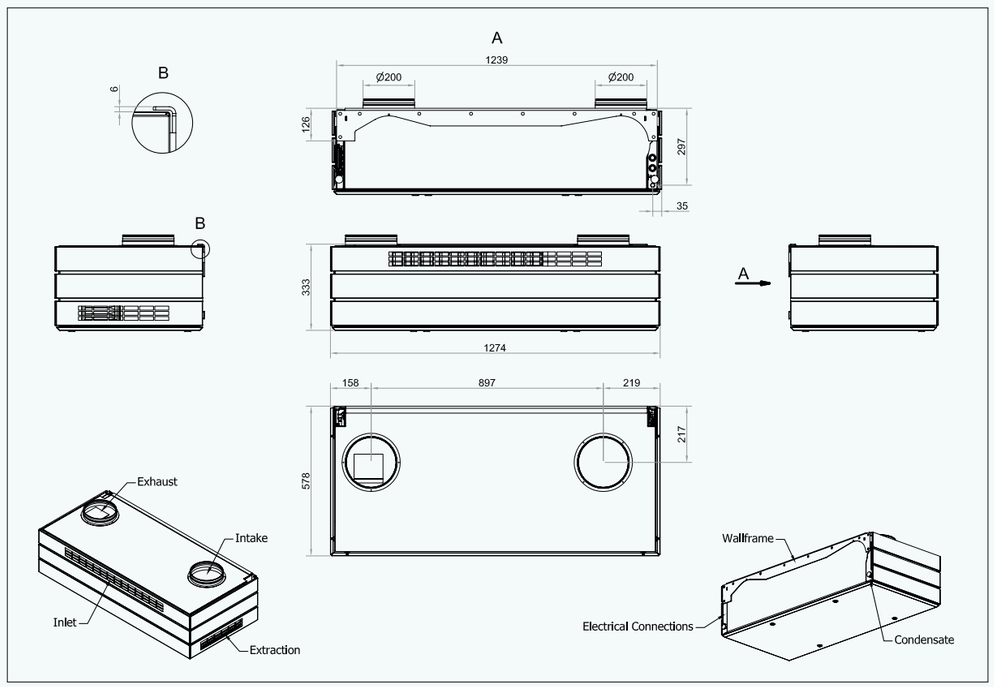
F1	Inlet fan	BP	Bypass damper	ET	Exhaust temperature sensor
F2	Exhaust fan	HE	Countercurrent heat exchanger	PI	Connection for pressure gauge for airflow-measurement, inlet
IF	Fresh air filter	CT	Condensate tray	PE	Connection for pressure gauge for airflow-measurement, extraction
EF	Exhaust air filter	CP	Condensate pump	CH	Comfort heating surface
SD	Supply damper	FT	Float	IT	Inlet temperature sensor
ED	Exhaust damper (overpressure)	RT/FL	Room temperature sensor/flow sensor		
		OT	Outdoor temperature sensor		

AML 300 / AMP 300

AML 300 HT / AMP 300 HT



AML 300 VT / AMP 300 VT

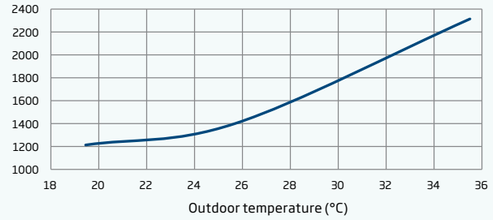


CC 300 COOLING UNIT

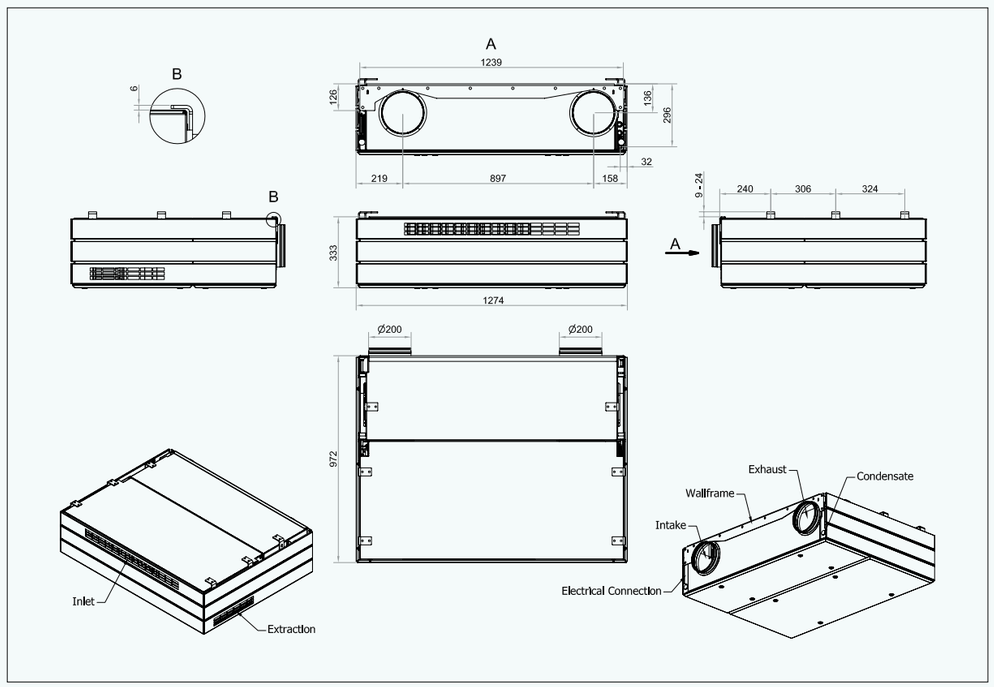
TECHNICAL DATA

Maximum cooling capacity	2314 W
Refrigerant	R407c
Filling	0,575 kg
Operating current	3,6 A
Power consumption	868 W
Electrical connection	1x230 V AC 50 Hz
Duct connection	Ø200 mm
Condensate drain	Ø16 mm
De-icing interval	2 h
De-icing period	5°C or 10 min.
Weight	55 kg
COP value	2,6
Leakage current	≤ 2 mA

COOLING CAPACITY (W)



AMP 300 HT - CC



AML 500 / AMP 500

TECHNICAL DATA

Max. capacity at 30 dB(A)	430 m³/h
Max. capacity at 35 dB(A)	550 m³/h
Throw (0,15 m/s)	5 m at 350 m³/h
	5.9 m at 450 m³/h
	7,5 m at 550 m³/h
Electrical connection	1 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø250 mm
Condensate drain	Ø16 mm
Weight	100.6 kg
Heat exchanger	Countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	Panels RAL 9010 (white)
Current	1.1 A
Supply cable	1.5 mm²
Max. power consumption	132 W
Leakage current	≤ 6 mA

WATER HEATING SURFACE (OPTION)

Max. operating temperature	90°C
Max. operating pressure	10 bar
Heating capacity	686 W*
Pipe connection	3/8" (DN 10)
Material of pipes/louvres	Copper/aluminium
Opening/closing time, motorised valve	< 60 s

* Capacity at: supply/return temperature 60/40°C, water volume 25 L/h

ELECTRIC HEATING SURFACE (OPTION)	PREHEATING	COMFORT HEATING
Electrical connection, internal	1 x 230 V	1 x 230 V
Heating capacity	1000 W	630 W
Thermal cut-out, aut. reset	70°C	70°C
Thermal cut-out, man. reset	120°C	120°C

STANDARD AND OPTIONS	AML 500 V	AML 500 H	AMP 500 V	AMP 500 H
Bypass	•	•	•	•
Electric preheating surface	•	•	•	•
Electric comfort heating surface	•	•	•	•
Water heating surface (comfort heating)	•	•	•	•
CO_2-sensor (wall-mounted)	•	•	•	•
CO_2-sensor (integrated)	•	•	•	•
PIR/motion sensor	•	•	•	•
Hygrostat	•	•	•	•
Condensate pump	•	•	•	•
Cooling module	–	–	–	•
Motorised exhaust damper	•	•	x	x
Motorised main damper	x	x	x	x
Countercurrent heat exchanger (alu)	x	x	x	x
Capacitive return for motor-driven main damper	•	•	•	•
Energy Meter	•	•	•	•

x : standard • : option – : not available

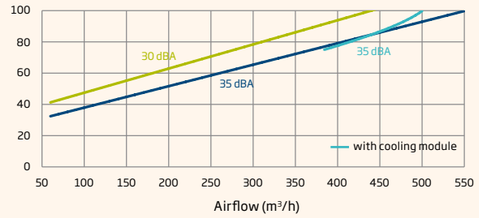
This ventilation unit is designed for medium-sized rooms. Horizontal or vertical models will be used depending on the room and location of the unit. The unit is available with a separate control panel, but can also be connected to a central control system.

A cooling module can be connected (see page35).

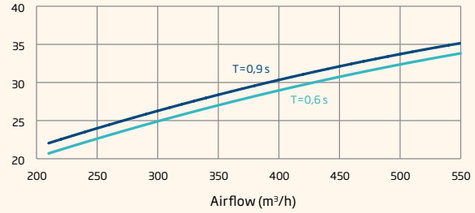
Ducts can also be connected for extraction or inlet.

AML 500 / AMP 500

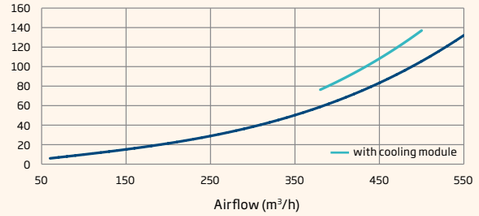
CAPACITY (%)



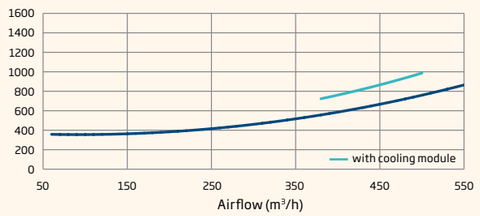
SOUND PRESSURE LEVEL (dB(A))



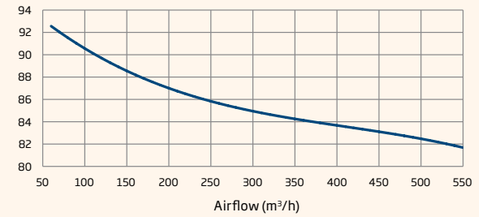
POWER CONSUMPTION (W)



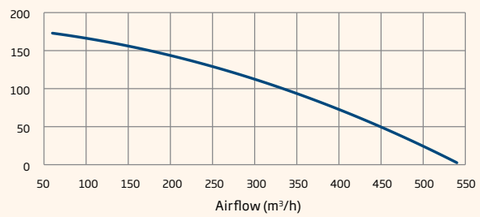
SFP W/(m³/s)



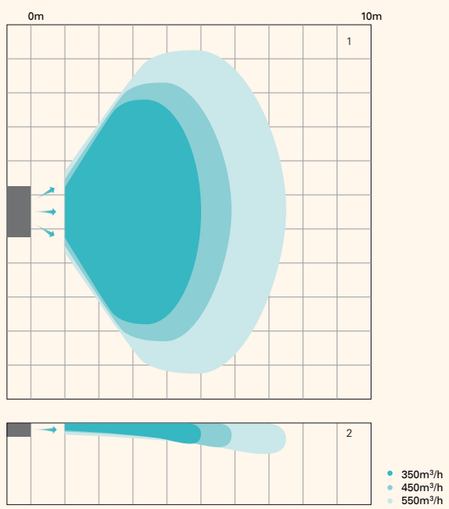
TEMPERATURE EFFICIENCY (%)



EXTERNAL PRESSURE DROP (Pa)



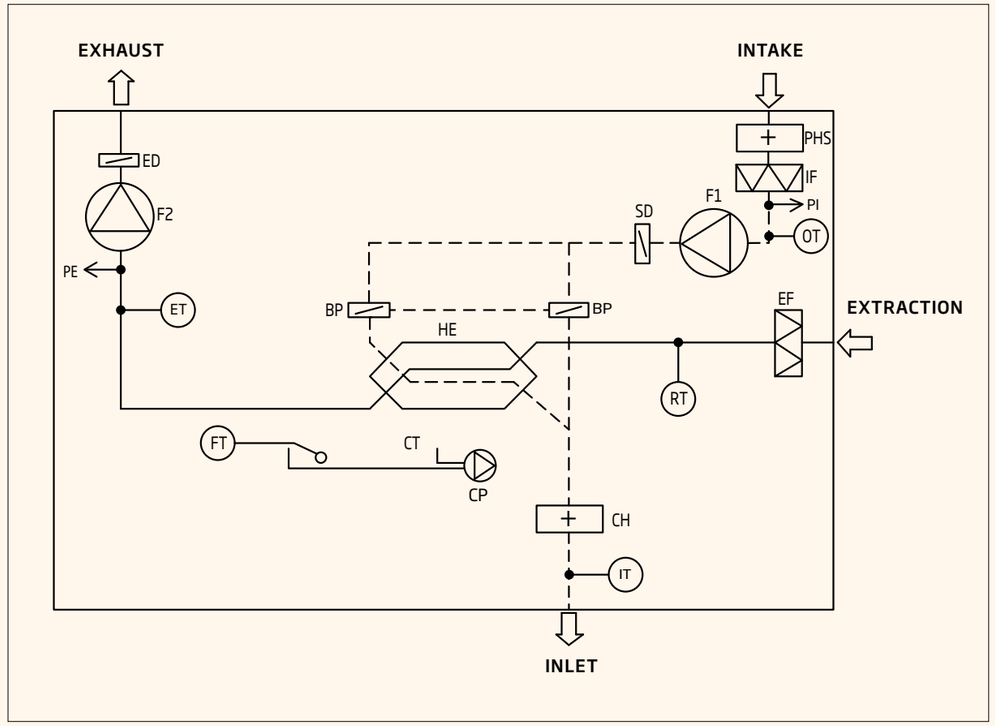
THROW (0,15 m/s)



The Airmaster units provide different air throw lengths depending on inlet volume. The blue tones on the illustration on the left show the airflow at different throws.

[1] Throw viewed from above
[2] Throw viewed from the side

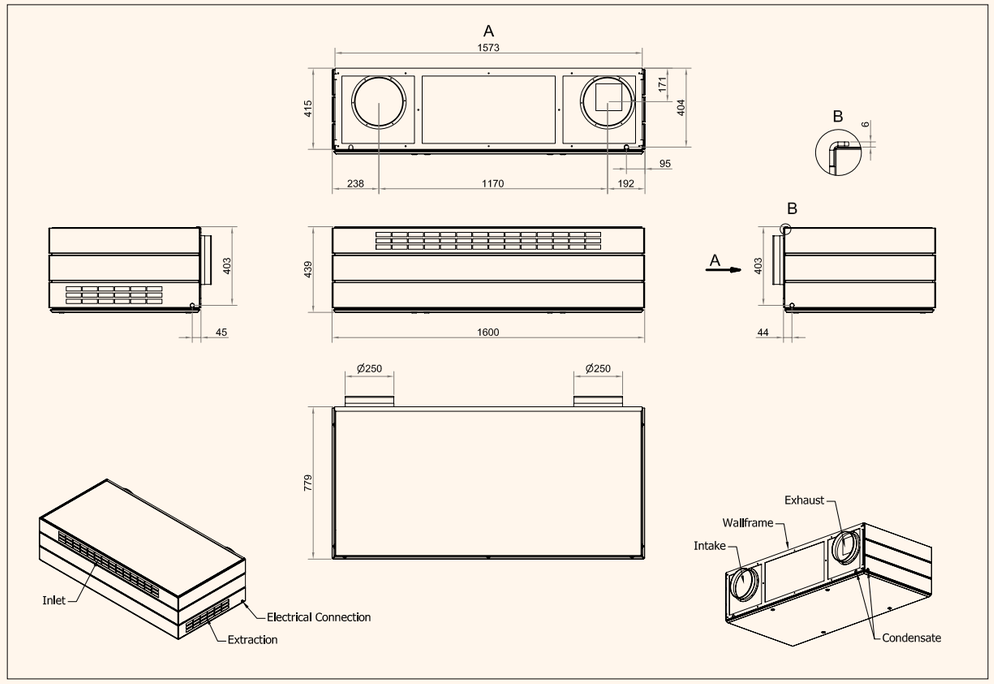
SCHEMATIC DIAGRAM



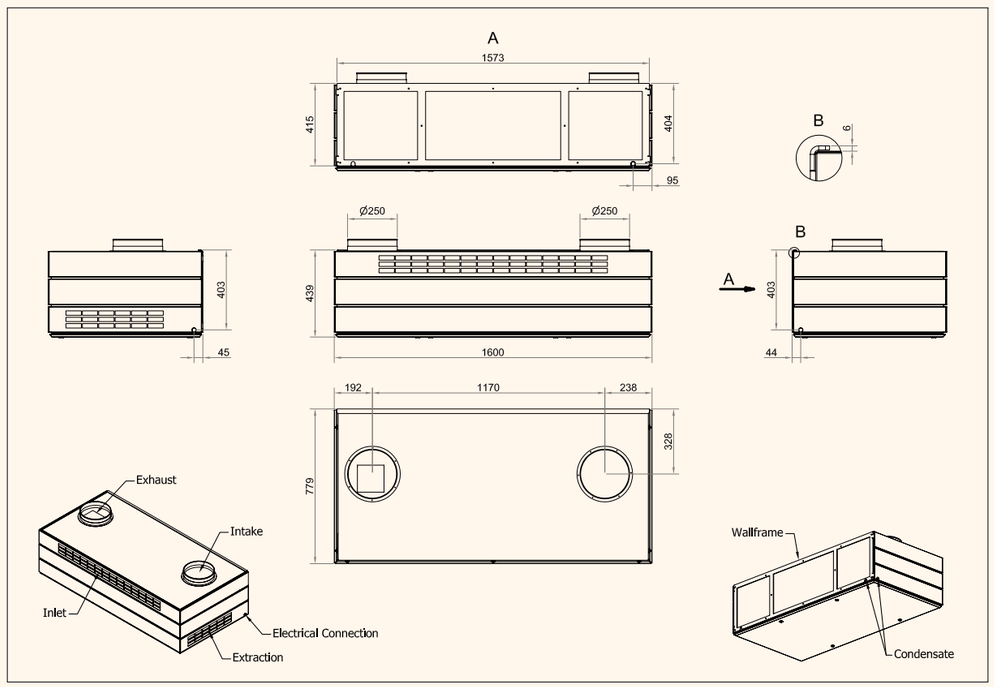
Name of component					
F1	Inlet fan	HE	Countercurrent heat exchanger	PI	Connection for pressure gauge for airflow-measurement, inlet
F2	Exhaust fan	CT	Condensate tray	PE	Connection for pressure gauge for airflow-measurement, extraction
IF	Fresh air filter	CP	Condensate pump	CH	Comfort heating surface
EF	Exhaust air filter	FT	Float	IT	Inlet temperature sensor
SD	Supply damper	RT/FL	Room temperature sensor/flow sensor	PHS	Electric preheating surface
ED	Exhaust damper (overpressure)	OT	Outdoor temperature sensor		
BP	Bypass damper	ET	Exhaust temperature sensor		

AML 500 / AMP 500

AML 500 HT / AMP 500 HT



AML 500 VT / AML 500 VT

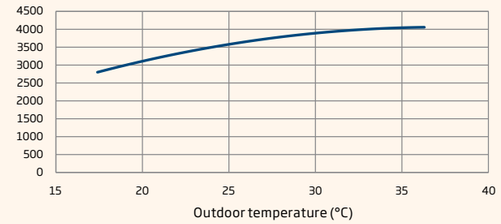


CC 500 COOLING UNIT

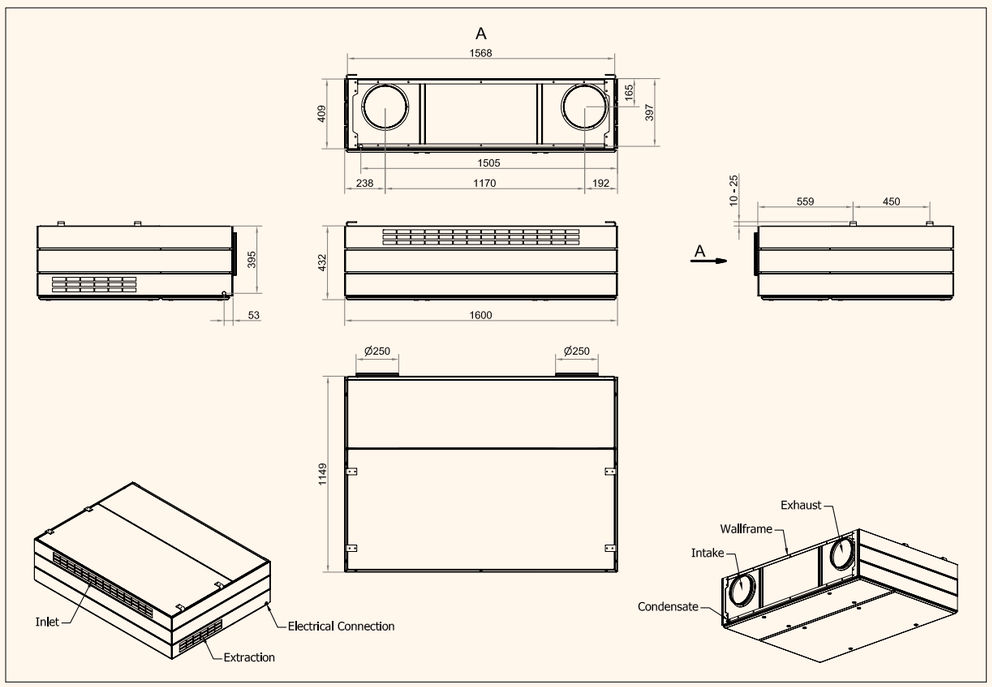
TECHNICAL DATA

Maximum cooling capacity	4065 W
Refrigerant	R407c
Filling	0.700 kg
Operating current	4.4 A
Power consumption	1033 W
Electrical connection	1x230 V AC 50 Hz
Duct connection	Ø250 mm
Condensate drain	Ø16 mm
De-icing interval	2 h
De-icing period	5°C or 10 minutes
Weight	71,4 kg
COP value	4.2
Leakage current	≤ 2 mA

COOLING CAPACITY (W)



AMP 500 HT - CC



Human beings are sensitive to changes in the air: There has to be a natural equilibrium between the temperature, oxygen and CO_2 content for us to feel comfortable.

AML 800 / AMP 800

TECHNICAL DATA

Max. capacity at 30 dB(A)	650 m³/h
Max. capacity at 35 dB(A)	725 m³/h
Throw (0,15 m/s)	6.5 m at 500 m³/h
	7.4 m at 600 m³/h
	8.1 m at 700 m³/h
Electrical connection	1 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø315 mm
Condensate drain	Ø16 mm
Weight	147 kg
Heat exchanger	2 x countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	Panels RAL 9010 (white)
Current	1.1 A
Supply cable	1.5 mm²
Recommended min. fuse	13 A
Max. power consumption	156 W
Leakage current	≤ 6 mA

WATER HEATING SURFACE (OPTION)

Max. operating temperature	90°C
Max. operating pressure	10 bar
Heating capacity	943 W*
Pipe connection	1/2" (DN 15)
Material of pipes/louvres	Copper/aluminium
Opening/closing time, motorised valve	< 60 s

* Capacity at: supply/return temperature 60/40°C, water volume 32 L/h

ELECTRIC HEATING SURFACE (OPTION)	PREHEATING	COMFORT HEATING
Electrical connection, internal	1 x 230 V	1 x 230 V
Heating capacity	1500 W	1000 W
Thermal cut-out, aut. reset	70°C	70°C
Thermal cut-out, man. reset	120°C	120°C

STANDARD AND OPTIONS	AML 800 V	AML 800 H	AMP 800 V	AMP 800 H
Bypass	•	•	•	•
Electric preheating surface	•	•	•	•
Electric comfort heating surface	•	•	•	•
Water heating surface (comfort heating)	•	•	•	•
CO_2-sensor (wall-mounted)	•	•	•	•
CO_2-sensor (integrated)	•	•	•	•
PIR/motion sensor	•	•	•	•
Hygrostat	•	•	•	•
Condensate pump	•	•	•	•
Insulated condensate tray	•	•	•	•
Cooling module	–	–	–	•
Motorised exhaust damper	x	x	x	x
Motorised main damper	x	x	x	x
Countercurrent heat exchanger (alu)	x	x	x	x
Capacitive return for motor-driven main damper	•	•	•	•
Energy Meter	•	•	•	•

x : standard • : option – : not available

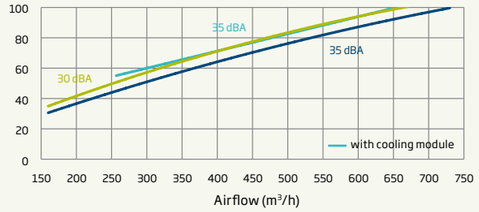
This ventilation unit is designed for large rooms with moderate requirement and is thus perfect for classrooms. Horizontal or vertical models will be used depending on the room and location of the unit. The unit is available with a separate control panel, but can also be connected to a central control system.

A cooling module can be connected (see page35).

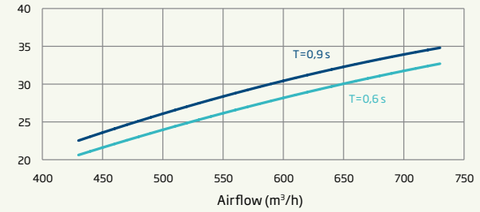
Ducts can also be connected for extraction or inlet.

AML 800 / AMP 800

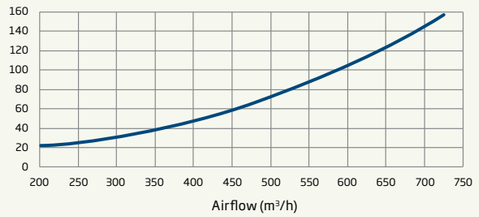
CAPACITY (%)



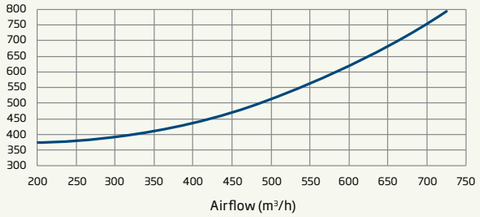
SOUND PRESSURE LEVEL (dB(A))



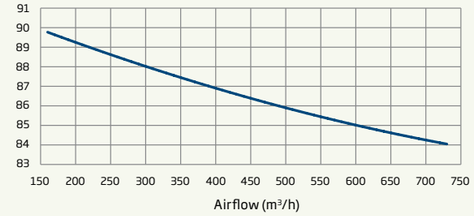
POWER CONSUMPTION (W)



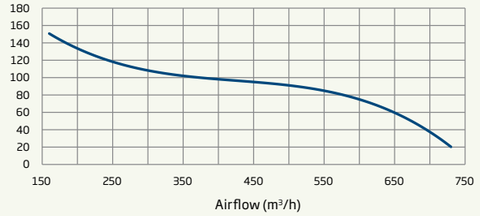
SFP W/(m³/s)



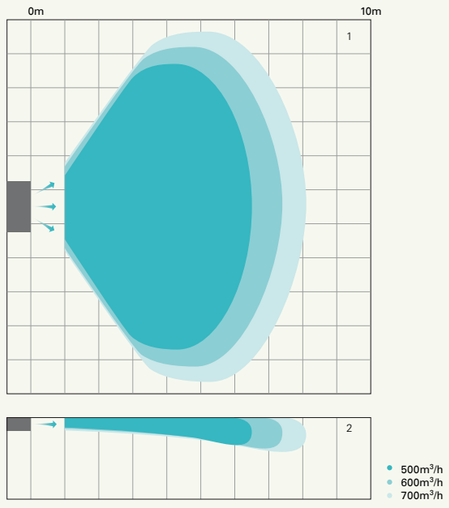
TEMPERATURE EFFICIENCY (%)



EXTERNAL PRESSURE DROP (Pa)



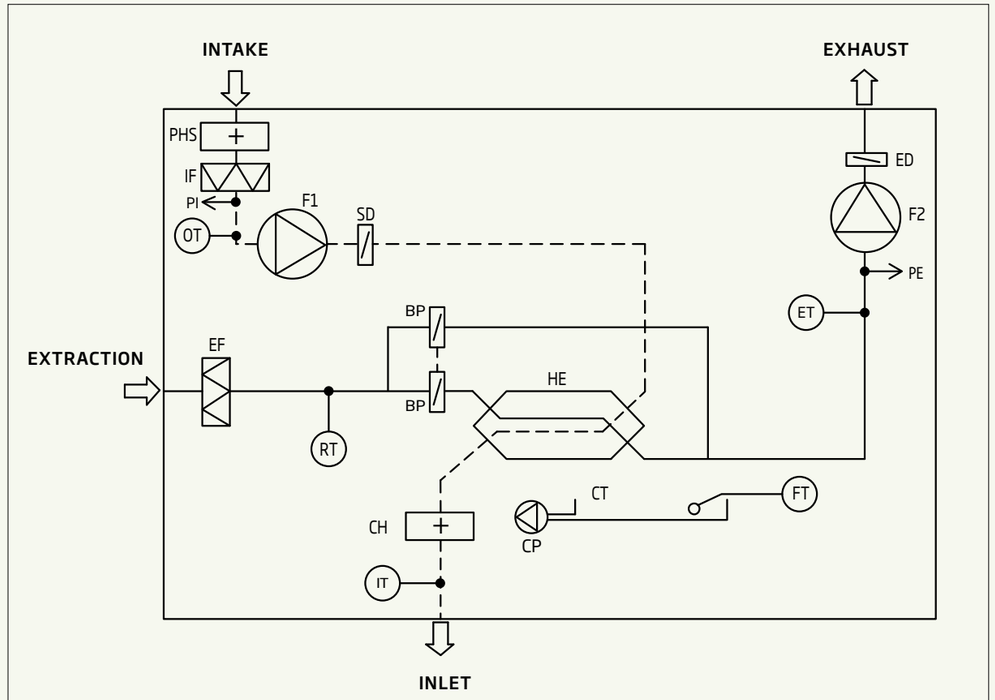
THROW (0,15 m/s)



The Airmaster units distribute the inlet to different degrees, depending on the given airflow. The blue tones on the illustration on the left show the airflow at different throws.

[1] Throw viewed from above
[2] Throw viewed from the side

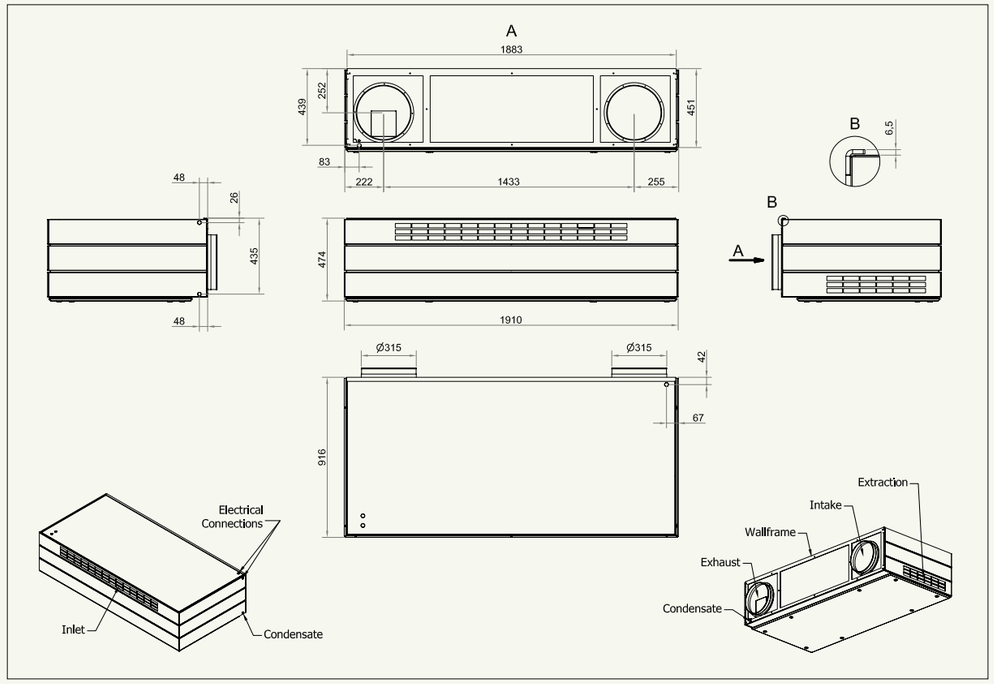
SCHEMATIC DIAGRAM



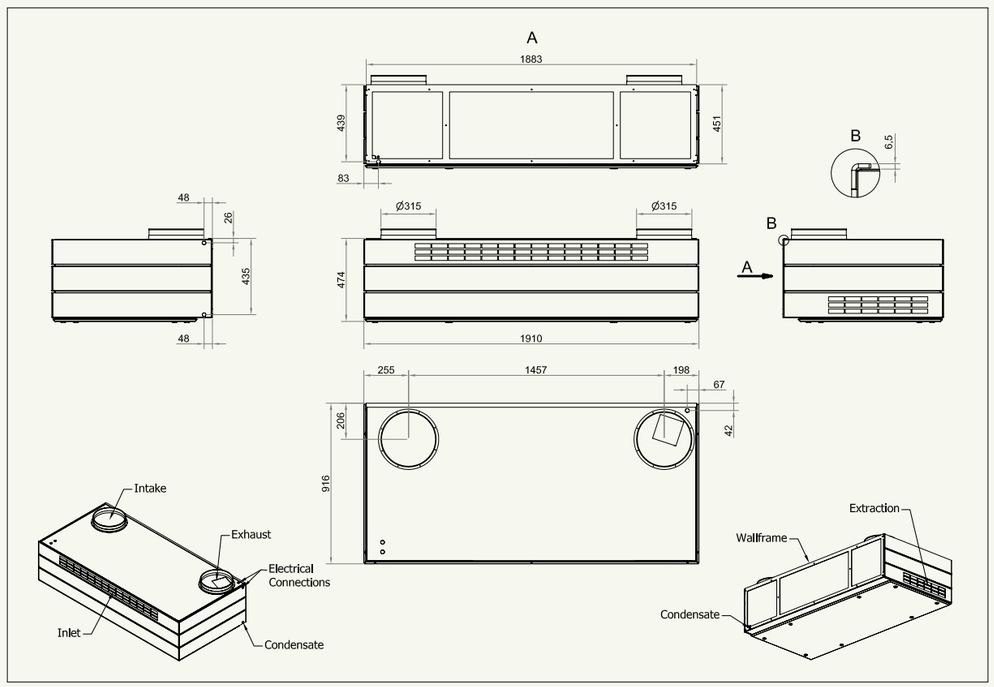
Name of component					
F1	Inlet fan	HE	Countercurrent heat exchanger	PI	Connection for pressure gauge for airflow-measurement, inlet
F2	Exhaust fan	CT	Condensate tray	PE	Connection for pressure gauge for airflow-measurement, extraction
IF	Fresh air filter	CP	Condensate pump	CH	Comfort heating surface
EF	Exhaust air filter	FT	Float	IT	Inlet temperature sensor
SD	Supply damper	RT/FL	Room temperature sensor/flow sensor	PHS	Electric preheating surface
ED	Exhaust damper (overpressure)	OT	Outdoor temperature sensor		
BP	Bypass damper	ET	Exhaust temperature sensor		

AML 800 / AMP 800

AML 800 HT / AMP 800 HT



AML 800 VT / AMP 800 VT

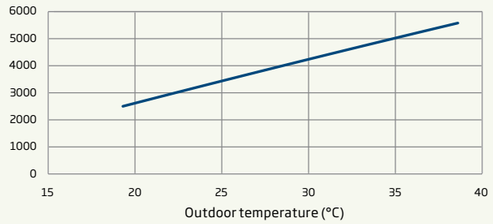


CC 800 COOLING UNIT

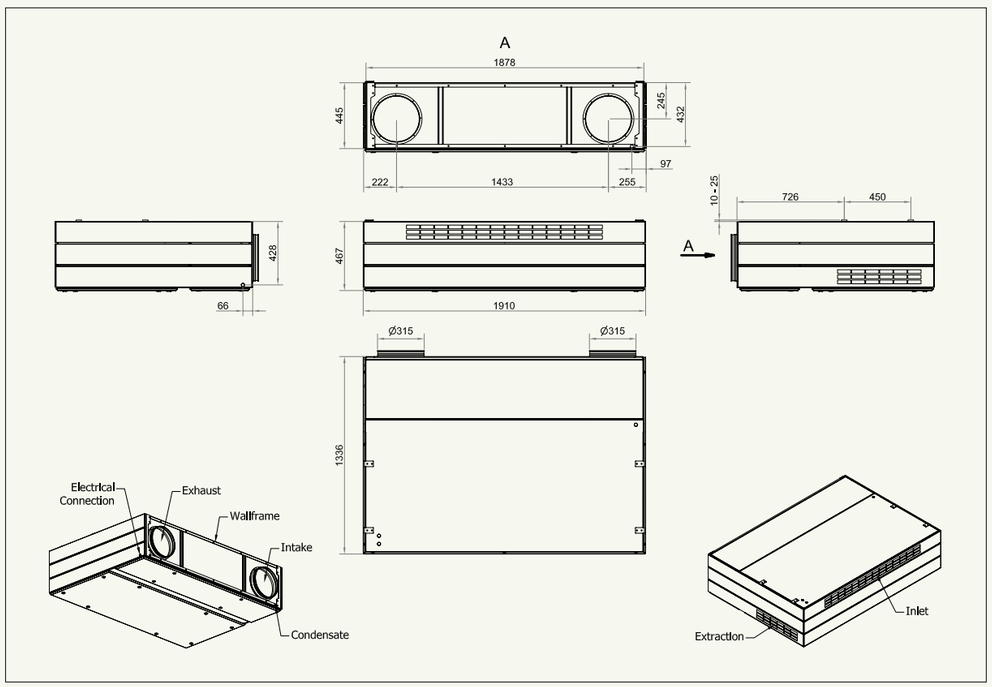
TECHNICAL DATA

Maximum cooling capacity	5622 W
Refrigerant	R407c
Filling	0.950 kg
Operating current	10.8 A
Power consumption	1991 W
Electrical connection	1x230 V AC 50 Hz
Duct connection	Ø315 mm
Condensate drain	Ø16 mm
De-icing interval	2 h
De-icing period	5°C or 10 minutes
Weight	86 kg
COP value	2.82
Leakage current	≤ 2 mA

COOLING CAPACITY (W)



AMP 800 HT - CC



Decentralised ventilation gives you the freedom to change your mind. The ventilation can be easily reconfigured if the rooms are to be used for a different purpose.

AMP 900

TECHNICAL DATA

Normal capacity, mixing	690 m³/h at 30 dB(A)
	830 m³/h at 35 dB(A)
Normal capacity, displacement	650 m³/h at 30 dB(A)
	800 m³/h at 35 dB(A)
Mixing, throw (0.15 m/s)	Adjustable grille, 1/1, 7 m v/ 830 m³/h
	Adjustable grille, 1/1, 6 m v/ 700 m³/h
	Adjustable grille, 2/3, 12 m v/ 850 m³/h
	Adjustable grille, 2/3, 9 m v/ 700 m³/h
	Adjustable grille, 1/2, 12 m v/ 700 m³/h
Displacement, near zone (0.15 m/s)	Near zone from fitting, approx. 1.5 m v/800 m³/h
	Near zone from fitting, approx. 1.2 m v/650 m³/h
Electrical connection	1 ~ 230 V, 50 Hz, N + PE
Duct connection	Ø315 mm
Condensate drain	Ø16 mm
Weight	180 kg
Heat exchanger	3 x countercurrent exchanger (plastic)
Filter	F5 standard, F7 option
Colour	RAL 9010 (white)
Current	1.8 A
Supply cable	1.5 mm²
Max. power consumption	240 W
Leakage current	≤ 6 mA

ELECTRIC HEATING SURFACE (OPTION)	PREHEATING	COMFORT HEATING
Electrical connection, internal	1 x 230 V	1 x 230 V
Heating capacity	1500 W	1050 W
Thermal cut-out, aut. reset	70°C	70°C
Thermal cut-out, man. reset	120°C	120°C

WATER HEATING SURFACE (OPTION)	
Max. operating temperature	90°C
Max. operating pressure	10 bar
Heating capacity	991 W*
Pipe connection	1/2" (DN 15)
Material of pipes/louvres	Cobber/aluminium
Opening/closing time, motorised valve	< 60 s

* Capacity at: supply/return temperature 60/40°C, water volume 33 L/h

The AMP 900 is available in two main models: mixer and forced ventilation. The unit is designed to either act as a mixer or forced ventilation unit, depending on room configuration and use. The unit can be placed on the floor or discreetly between cupboards, as an integrated part of the room.

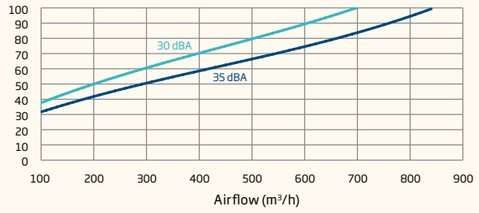
The AMP 900 is designed for larger rooms, such as classrooms, meeting rooms and open plan offices.

AMP 900

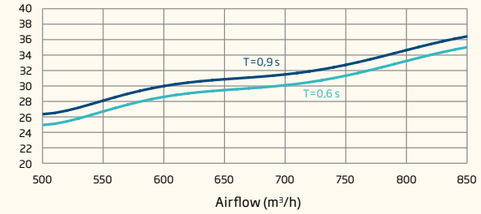
STANDARD AND OPTIONS	AMP 900 VM MIXING	AMP 900 HM MIXING	AMP 900 VD DISPLACEMENT	AMP 900 HD DISPLACEMENT
Bypass	•	•	•	•
Electric preheating surface	•	•	•	•
Electric comfort heating surface	•	•	•	•
Water heating surface (comfort heating)	•	•	–	–
CO_2-sensor (wall-mounted)	•	•	•	•
CO_2-sensor (integrated)	•	•	•	•
PIR/motion sensor	•	•	•	•
Hygrostat	•	•	•	•
Condensate pump	•	•	•	•
Cooling module	–	–	–	–
Motorised exhaust damper	x	x	x	x
Motorised main damper	x	x	x	x
Countercurrent heat exchanger (plastic)	x	x	x	x
Capacitive return for motor-driven main damper	•	•	•	•
Energy Meter	•	•	•	•

x : standard • : option – : not available

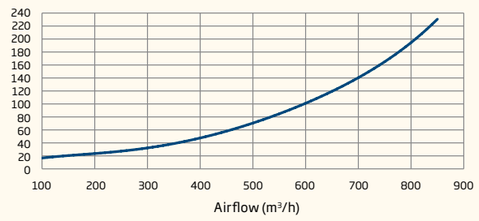
MIXING - CAPACITY (%)



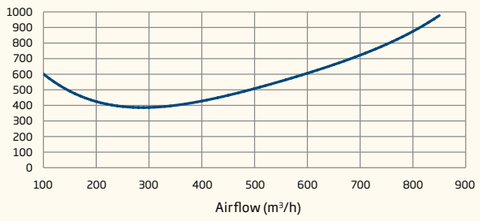
MIXING - SOUND PRESSURE LEVEL (dB(A))



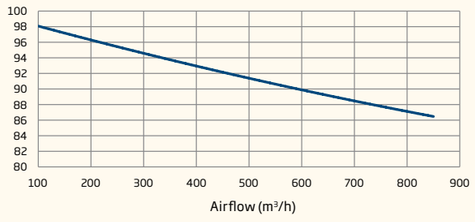
MIXING - POWER CONSUMPTION (W)



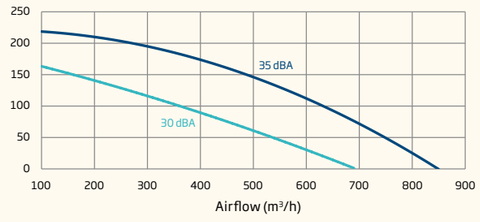
MIXING - SFP W/(m³/s)



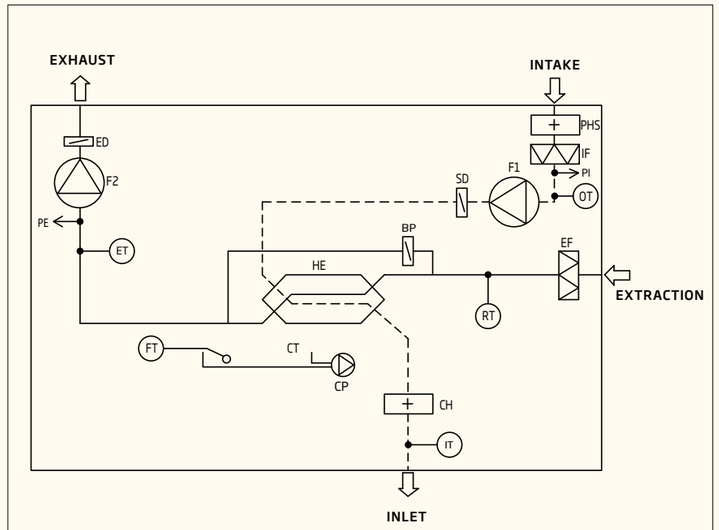
MIXING - TEMPERATURE EFFICIENCY (%)



MIXING - EXTERNAL PRESSURE DROP (Pa)



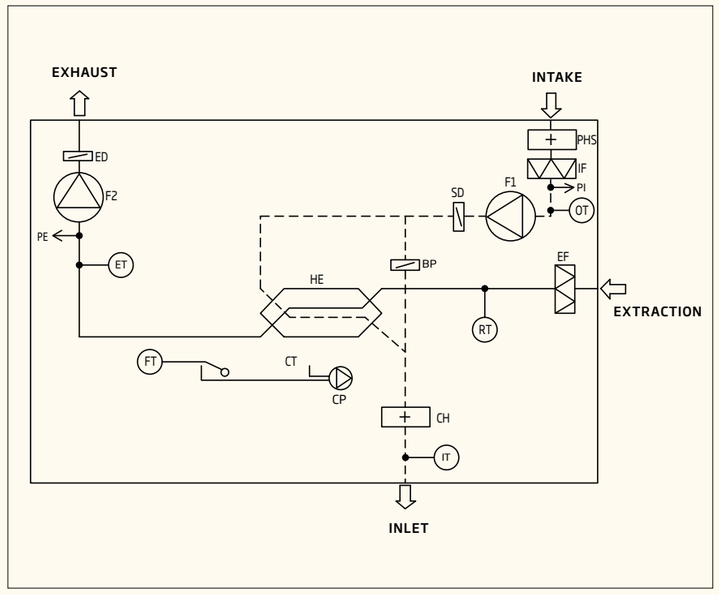
SCHEMATIC DIAGRAM - MIXING



Name of component

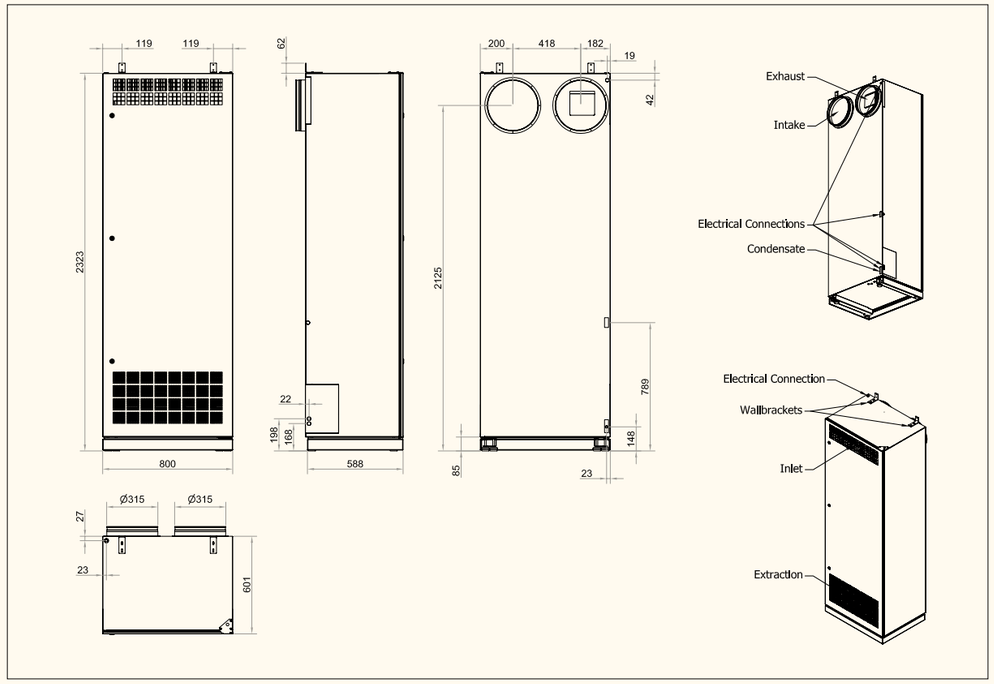
F1	Inlet fan
F2	Exhaust fan
IF	Fresh air filter
EF	Exhaust air filter
SD	Supply damper
ED	Exhaust damper (overpressure)
BP	Bypass damper
HE	Countercurrent heat exchanger
CT	Condensate tray
CP	Condensate pump
FT	Float
RT/FL	Room temperature sensor/flow sensor
OT	Outdoor temperature sensor
ET	Exhaust temperature sensor
PI	Connection for pressure gauge for airflow-measurement, inlet
PE	Connection for pressure gauge for airflow-measurement, extraction
CH	Comfort heating surface
PHS	Electric preheating surface
IT	Inlet temperature sensor

SCHEMATIC DIAGRAM - DISPLACEMENT

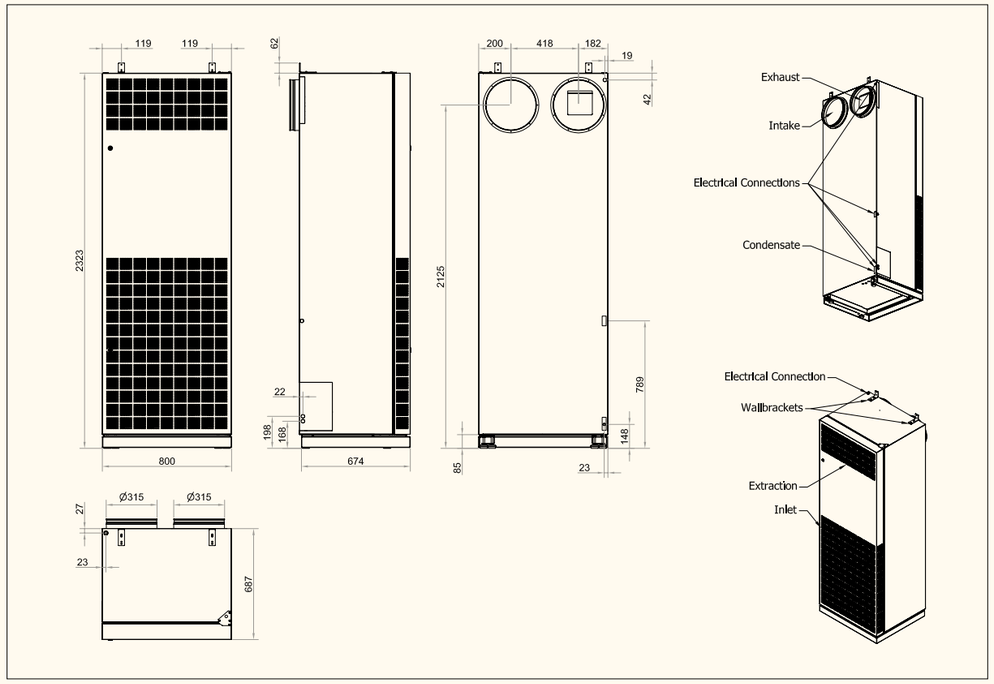


AMP 900

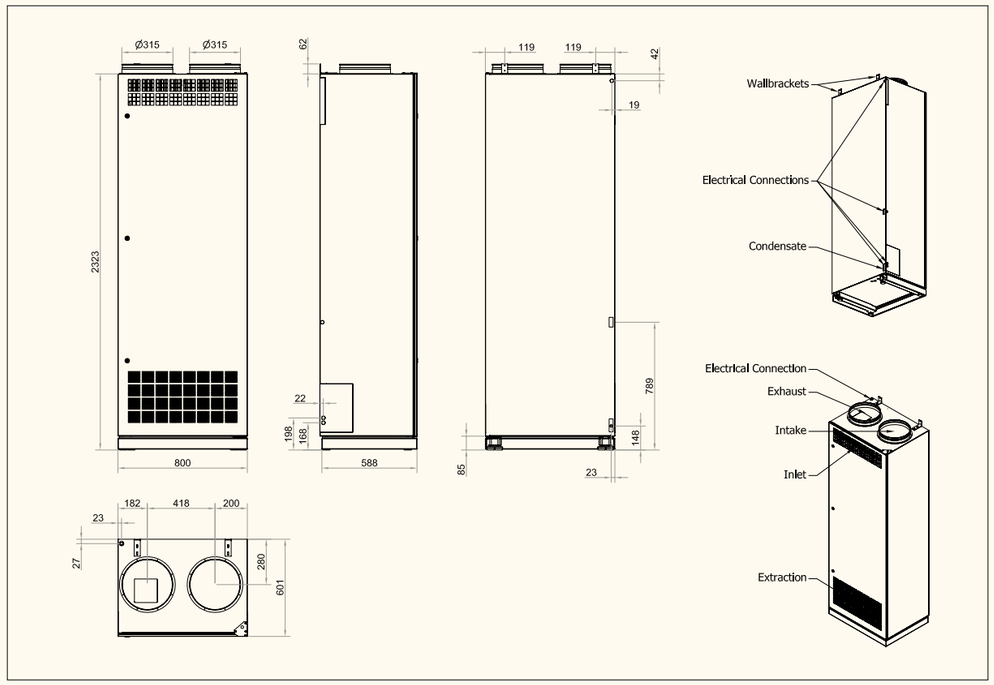
AMP 900 HM



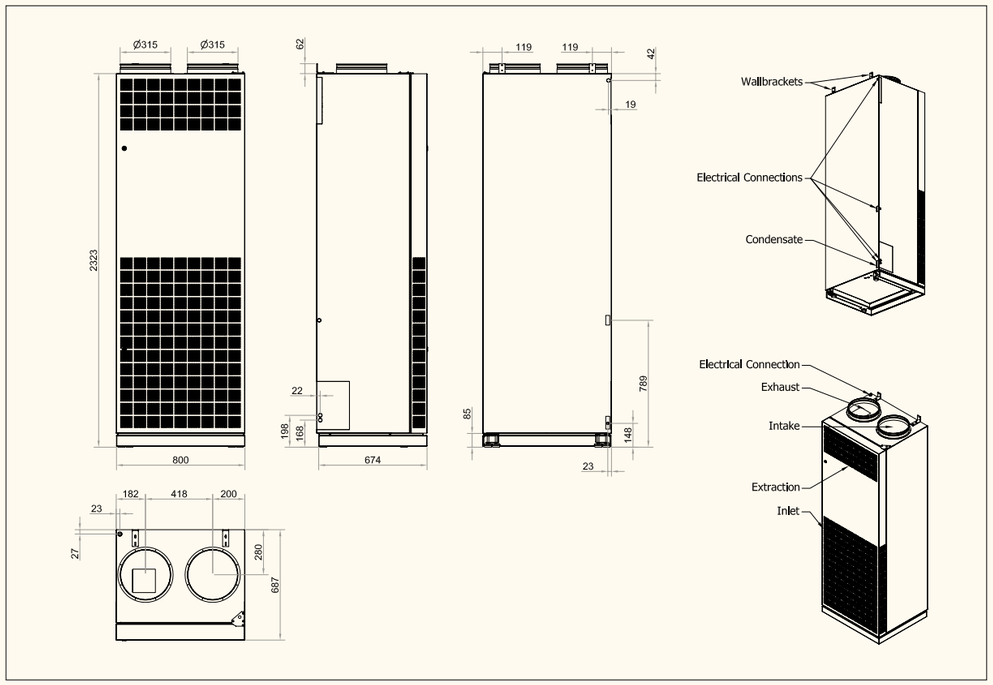
AMP 900 HD



AMP 900 VM

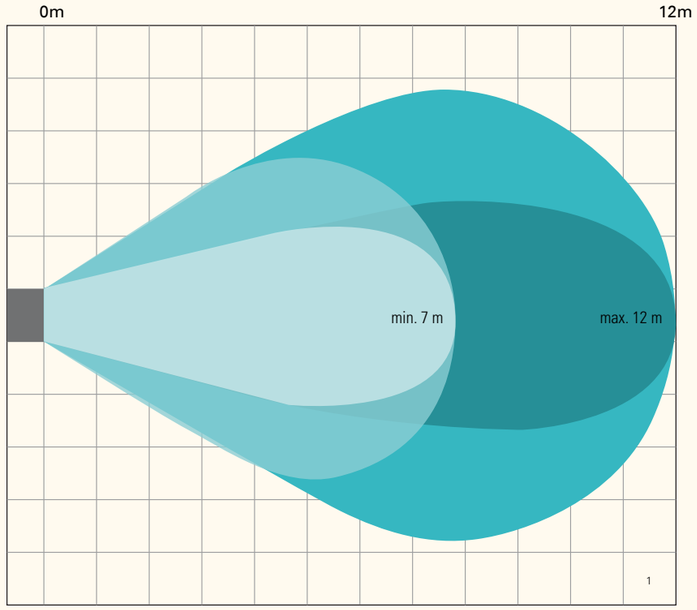


AMP 900 VD



AMP 900

THROW - MIXING (0,15 m/s)

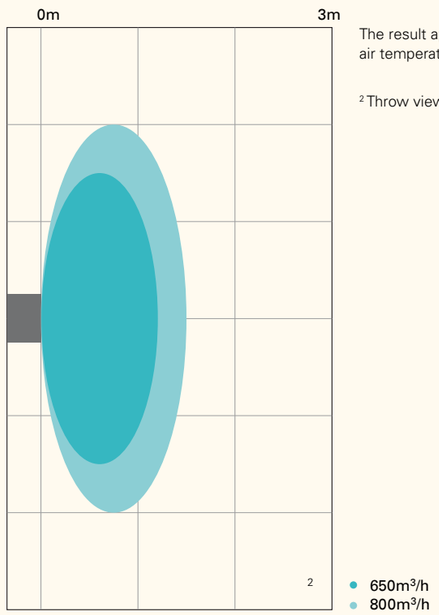


The Airmaster units provide different air throw lengths depending on inlet volume. The blue tones on the illustration on the left show the airflow at different throws.

[1] Throw viewed from above

The throw and distribution of the inlet in the room can be adapted to the geometry of the room by adjusting the supply opening.

THROW - DISPLACEMENT (0,15 m/s)

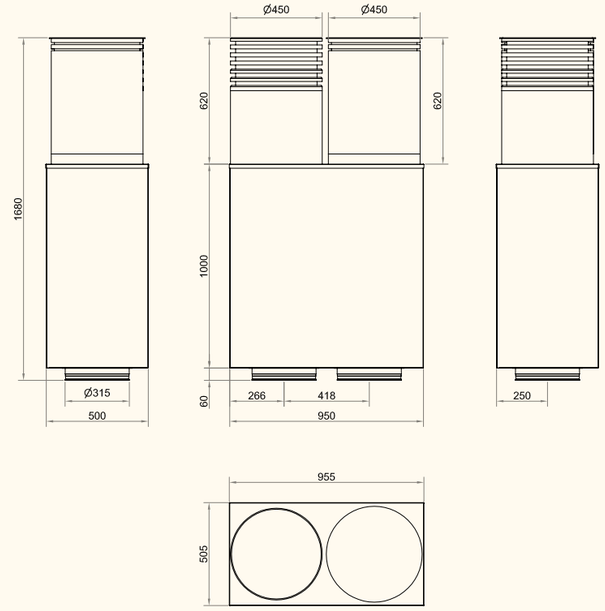


The result applies to an supply air temperature deficit of 3-5°C.

[2] Throw viewed from above

- 650m³/h
- 800m³/h

ROOF CAP



A panel box is available to conceal the intake and exhaust for the roof cap module. Standard colour: white.

THE WIDE RANGE OF **OPTIONS**

AMP 1200

FUNCTION AND DESIGN

Ventilation should not always just be a technical necessity. It can also play a part in the function of a room. The AMP 1200 is a concept within decentralised ventilation which combines fresh air with elegant design, which can be used for a lot more than you might believe. The AMP 1200 is a floor-mounted unit, available in horizontal and vertical models. It can be mounted against a wall (right/left variant) or freestanding (central variant). Different design panels mean the front can be used as a notice board, or mirror for example, and it can also be fitted with acoustic panels.

With Airmaster, you are not only choosing a responsible solution. You are also choosing a solution for the future.

Design your own AMP 1200 with **Airmaster Visualizer**

www.airmaster.dk

Visit www.airmaster.dk to design, choose, save and print your very own design.

AMP 1200

TECHNICAL DATA

Capacity:	**35 dB(A)**	**30 dB(A)**
Horizontal model		
right/left	1180 m³/h	930 m³/h
centre	1310 m³/h	1050 m³/h
Vertical model, Ø400 mm		
right/left	1130 m³/h	870 m³/h
centre	1260 m³/h	980 m³/h
Vertical model, Ø315 mm		
right/left	1060 m³/h	820 m³/h
centre	1170 m³/h	920 m³/h

Throw (0,15 m/s) - centre	Min. 4.5 m at 1000 m³/h
	Max. 5.5 m at 1000 m³/h
	Min. 5.5 m at 1300 m³/h
	Max. 7.0 m at 1300 m³/h
Throw (0,15 m/s) – right/left	Min. 6.5 m at 1000 m³/h
	Max. 7.5 m at 1000 m³/h
	Min. 7.5 m at 1300 m³/h
	Max. 9.5 m at 1300 m³/h
Electrical connection - with preheating surface	3~230 V + N + PE/50 Hz (preheating surface to be provided with a dedicated phase)
Electrical connection - without preheating surface	1~230 V + N + PE/50 Hz
Duct connection	Ø400 mm
Condensate drain	Ø16 mm
Weight	Right-/left model 545 kg Centre model 630 kg
Heat exchanger	4 x countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Current	Unit without electrical heating surface 1.4 A
	Electrical preheating surface 10.9 A
	Electrical comfort heating surface 7.3 A
Supply cable	2.5 mm²
Max. power consumption	254 W
Leakage current	≤ 9 mA

WATER HEATING SURFACE (OPTION)

Max. operating temperature	90° C
Max. operating pressure	10 bar
Heating capacity	2109 W*
Pipe connection	3/4" (DN 20)
Material of pipes/louvres	Copper/aluminium
Opening/closing time, motorised valve	<60 s

* Capacity at: supply/return temperature 60/40°C, water volume 72 L/h

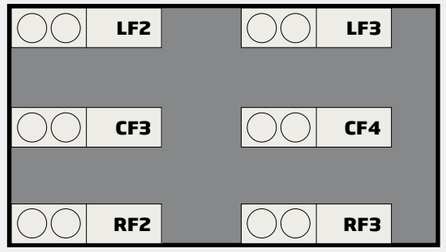
ELECTRIC HEATING SURFACE (OPTION)	PREHEATING	COMFORT HEATING
Electrical connection, internal	1 x 230 V	1 x 230 V
Heating capacity	2500 W	1670 W
Thermal cut-out, aut. reset	70°	70°
Thermal cut-out, man. reset	120°	120°

STANDARD AND OPTIONS	AMP 1200 V CENTRE	AMP 1200 V RIGHT/LEFT	AMP 1200 H CENTRE	AMP 1200 H RIGHT/LEFT
Bypass	x	x	x	x
Electric preheating surface	•	•	•	•
Electric comfort heating surface	•	•	•	•
Water heating surface (comfort heating)	•	•	•	•
CO_2-sensor (wall-mounted)	•	•	•	•
CO_2-sensor (integrated)	•	•	•	•
PIR/motion sensor	•	•	•	•
Hygrostat	•	•	•	•
Condensate pump	•	•	•	•
Cooling module	–	–	–	–
Spring-return actuator on main damper (for fresh air and exhaust air)	x	x	x	x
Countercurrent heat exchanger (alu)	x	x	x	x
Energy Meter	•	•	•	•

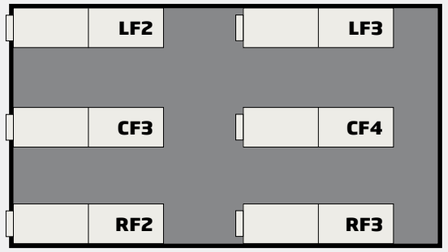
x : standard • : option – : not available

AMP 1200

VARIANTS



AMP 1200 V**RF2** (right, with 2 open sides)
AMP 1200 V**RF3** (right, with 3 open sides)
AMP 1200 V**CF3** (centre, with 3 open sides)
AMP 1200 V**CF4** (centre, with 4 open sides)
AMP 1200 V**LF2** (left, with 2 open sides)
AMP 1200 V**LF3** (left, with 3 open sides)

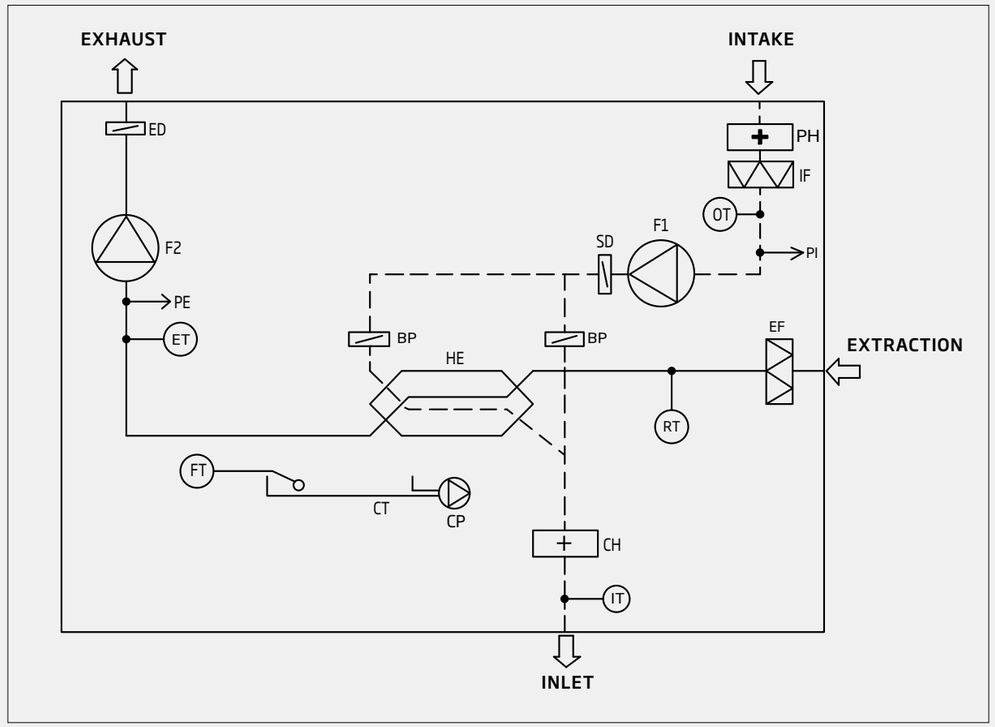


AMP 1200H**RF2** (right, with 2 open sides)
AMP 1200H**RF3** (right, with 3 open sides)
AMP 1200H**CF3** (centre, with 3 open sides)
AMP 1200H**CF4** (centre, with 4 open sides)
AMP 1200 H**LF2** (left, with 2 open sides)
AMP 1200 H**LF3** (left, with 3 open sides)

DESIGNPANELS	COLOUR	SIZE
Chipboard with melamine	White	600x500 mm
Chipboard with melamine	Black	600x500 mm
MDF	Lacquered (all colours)	600x500 mm
MDF	Lacquered (all colours)	1200x1000 mm
MDF with whiteboard laminate	White	1200x1000 mm
MDF with notice board surface	Black	1200x1000 mm
Mirror bonded to MDF	Mirror	1200x1000 mm
Sound-absorbing wood (Acoustic Lightboard)	White	1200x1000 mm

COLOUR OPTIONS
Lacquered MDF boards are supplied in the standard colours shown, but all RAL colours are available at an additional cost.

SCHEMATIC DIAGRAM

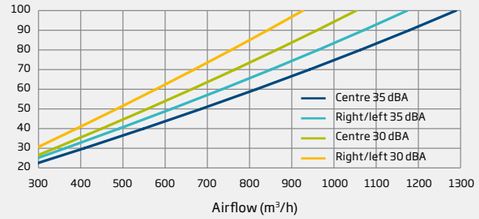


Name of component

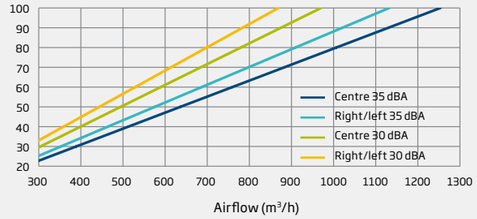
F1	Inlet fan	HE	Countercurrent heat exchanger	PI	Connection for pressure gauge for airflow-measurement, inlet
F2	Exhaust fan	CT	Condensate tray	PE	Connection for pressure gauge for airflow-measurement, extraction
IF	Fresh air filter	CP	Condensate pump	PHS	Electric preheating surface
EF	Exhaust air filter	FT	Float	CH	Comfort heating surface
SD	Supply damper	RT/FL	Room temperature sensor/flow sensor	IT	Inlet temperature sensor
ED	Exhaust damper (overpressure)	OT	Outdoor temperature sensor		
BP	Bypass damper	ET	Exhaust temperature sensor		

AMP 1200

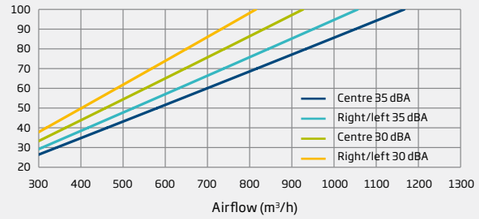
H CAPACITY (%)



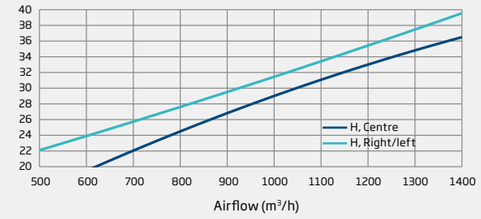
V CAPACITY (%) - Ø400 mm



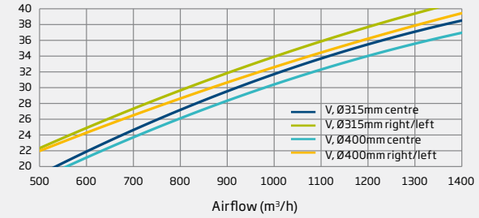
V CAPACITY (%) - Ø315 mm



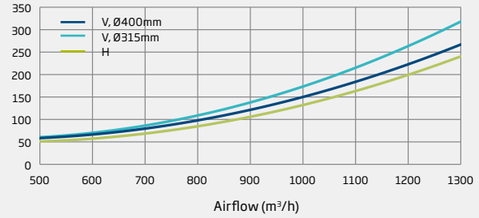
H SOUND PRESSURE LEVEL (dB(A))



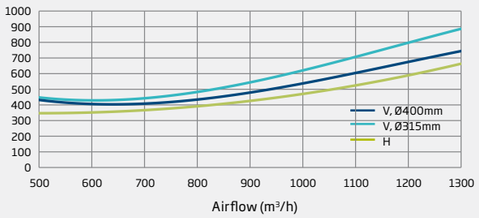
V SOUND PRESSURE LEVEL (dB(A))



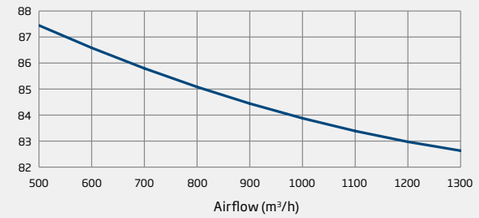
POWER CONSUMPTION (W)



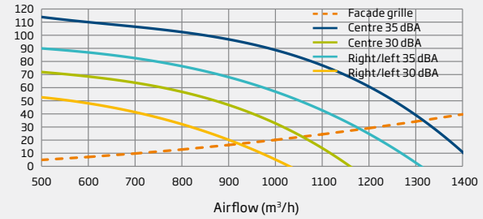
SFP W/(m³/s)



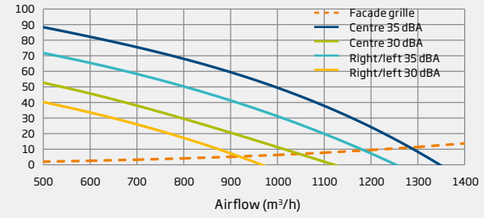
TEMPERATURE EFFICIENCY (%)



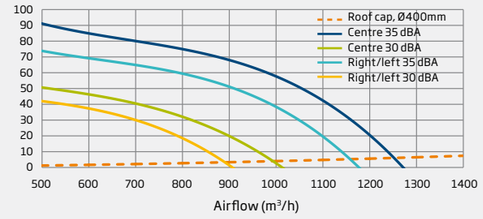
H EXTERNAL PRESSURE DROP (Pa) - FRESH AIR



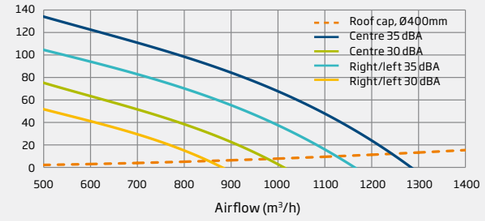
H EXTERNAL PRESSURE DROP (Pa) - EXHAUST AIR



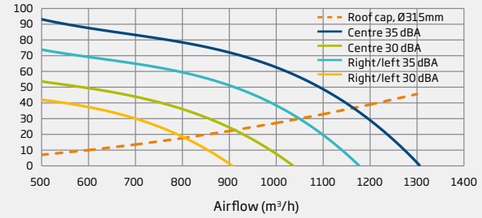
V EXTERNAL PRESSURE DROP (Pa) - Ø400 mm - FRESH AIR



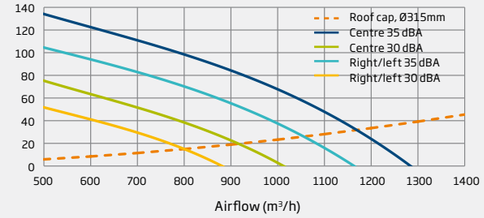
V EXTERNAL PRESSURE DROP (Pa) - Ø400 mm - EXHAUST AIR



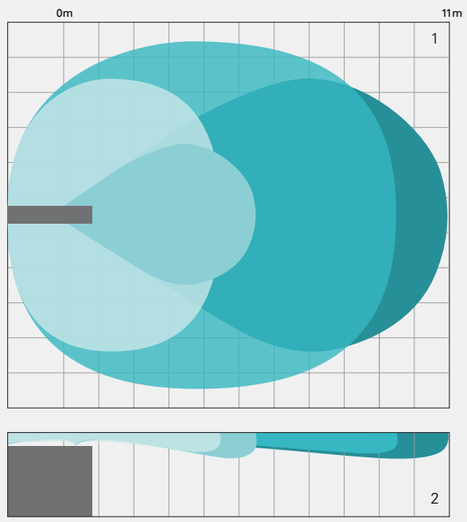
V EXTERNAL PRESSURE DROP (Pa) - Ø315 mm - FRESH AIR



V EXTERNAL PRESSURE DROP (Pa) - Ø315 mm - EXHAUST AIR



THROW (0,15 m/s)



1300 m³/h
Max.
Min.

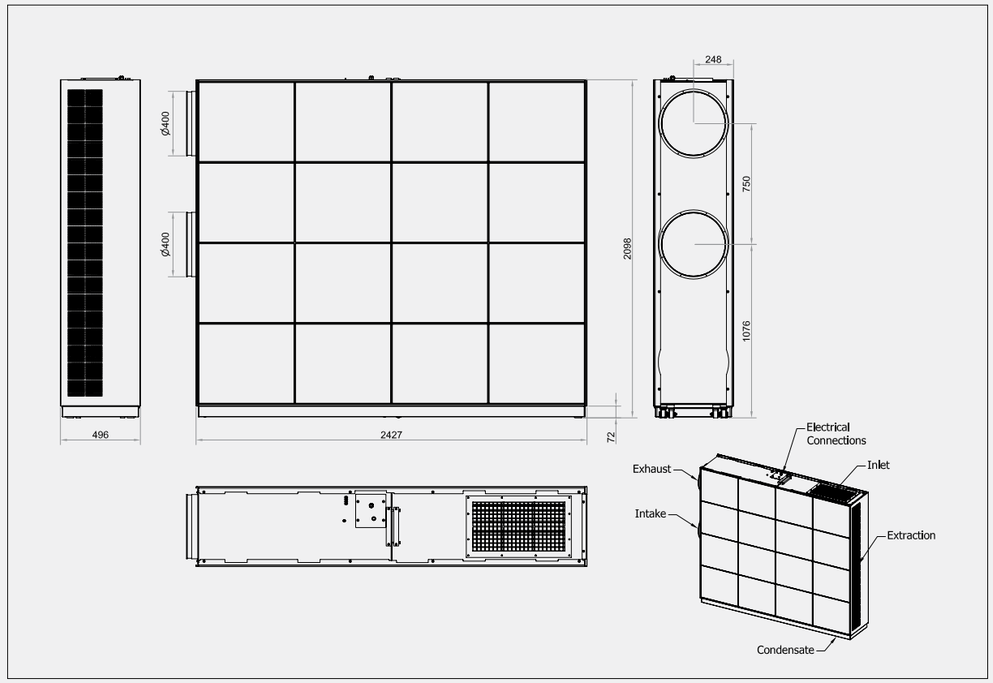
1000 m³/h
Max.
Min.

The Airmaster units provide different air throw lengths depending on inlet volume. The blue tones on the illustration on the left show the airflow at different throws.

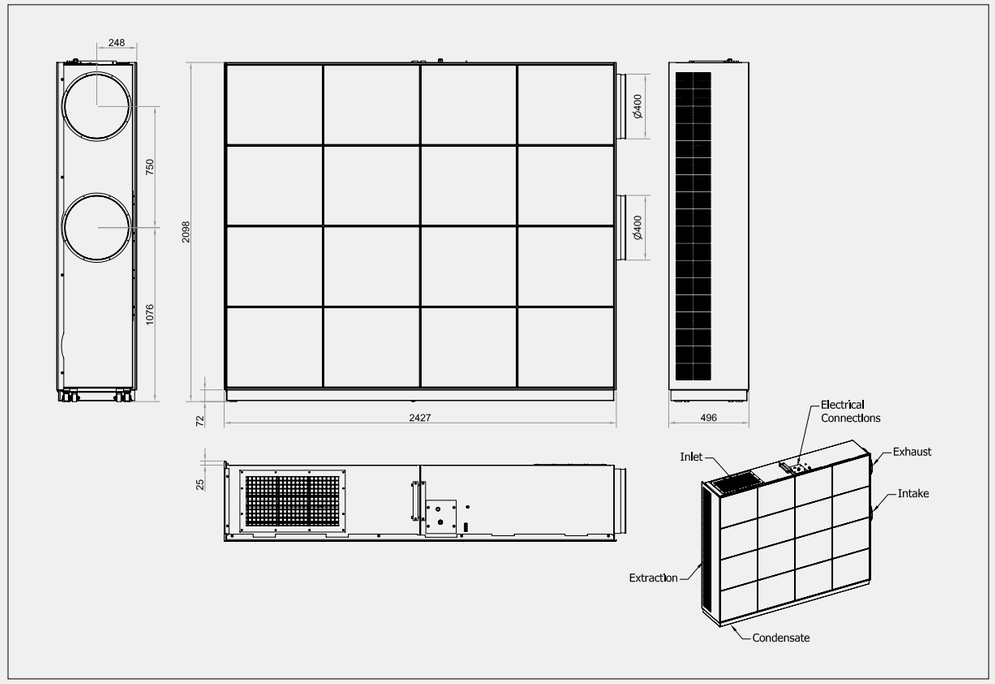
[1] Throw viewed from above
[2] Throw viewed from the side

AMP 1200

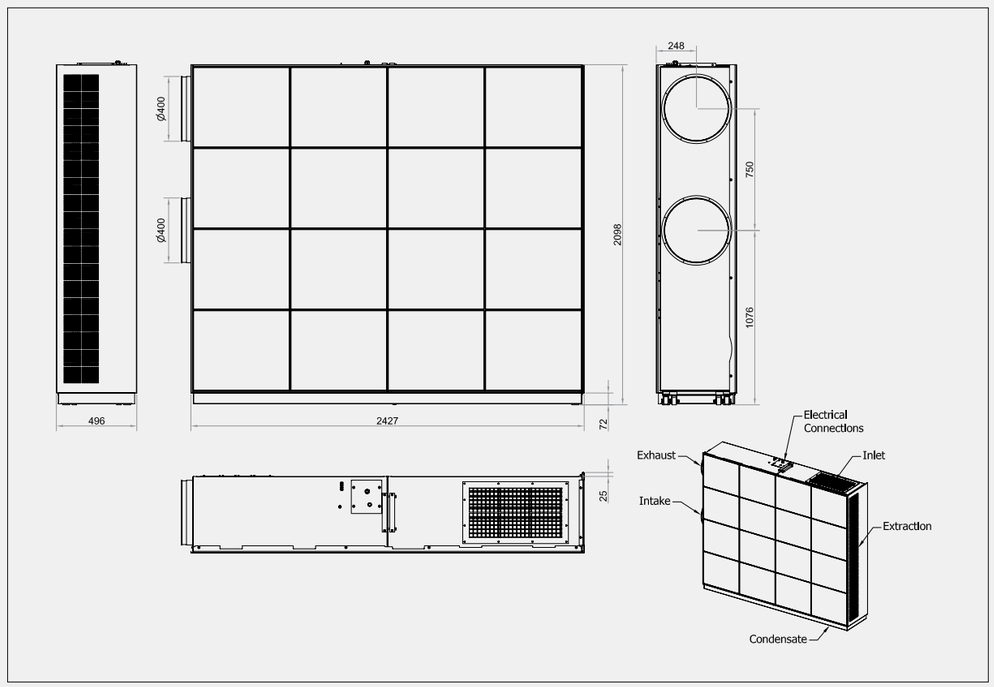
AMP 1200 HC



AMP 1200 HR

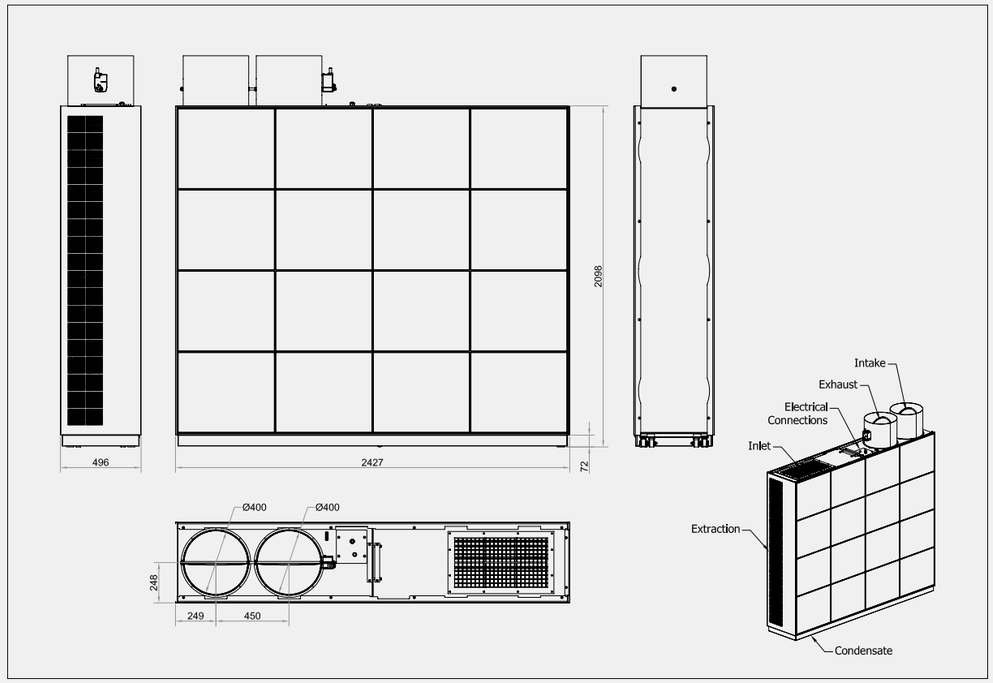


AMP 1200 HL

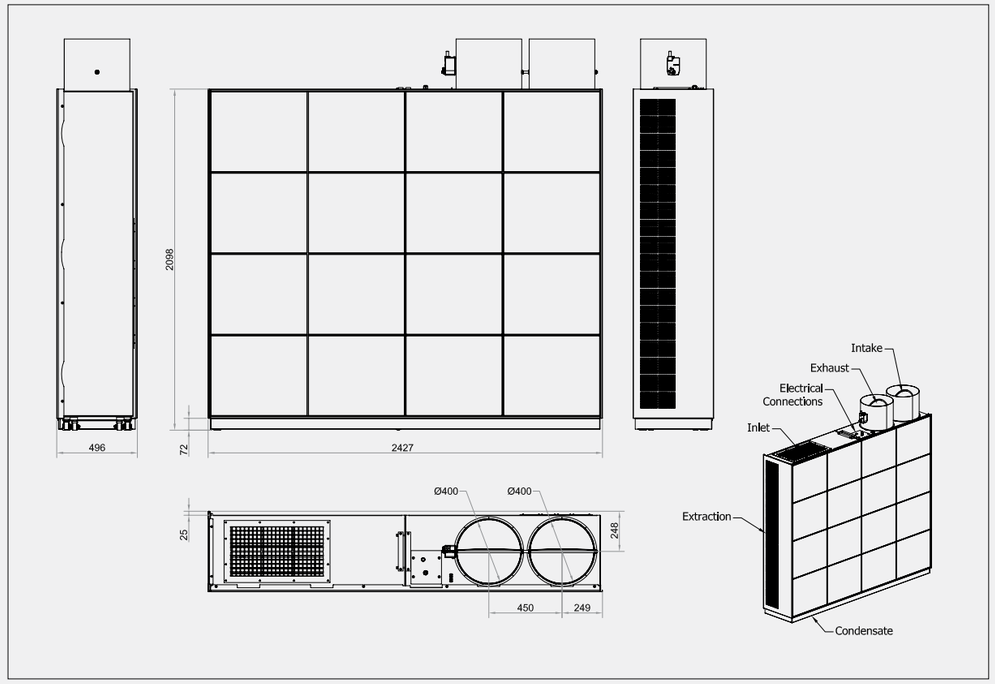


AMP 1200

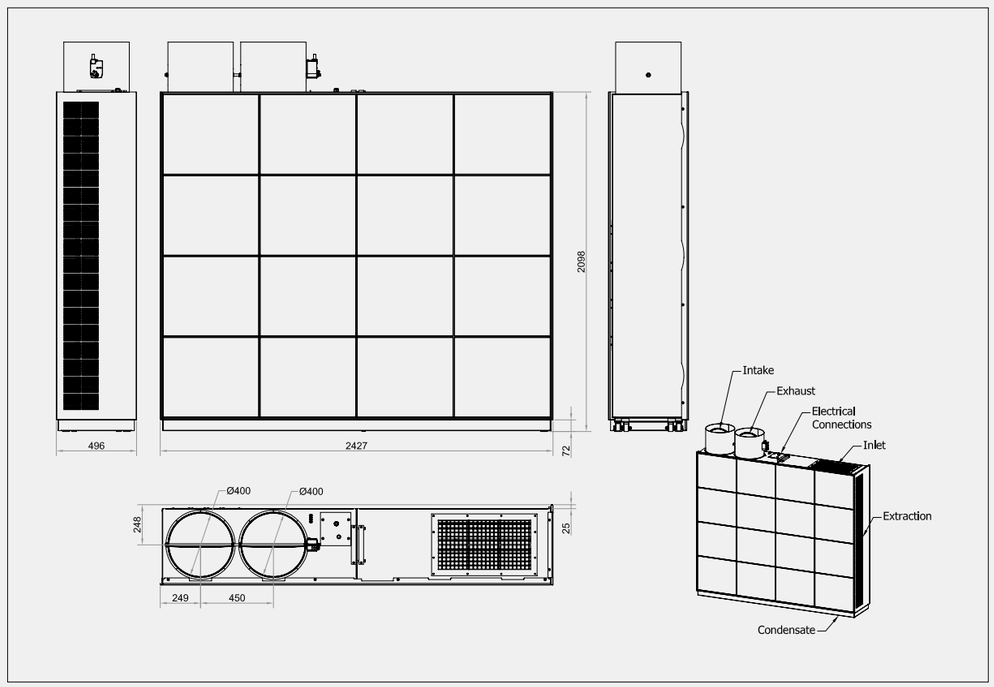
AMP 1200 VC



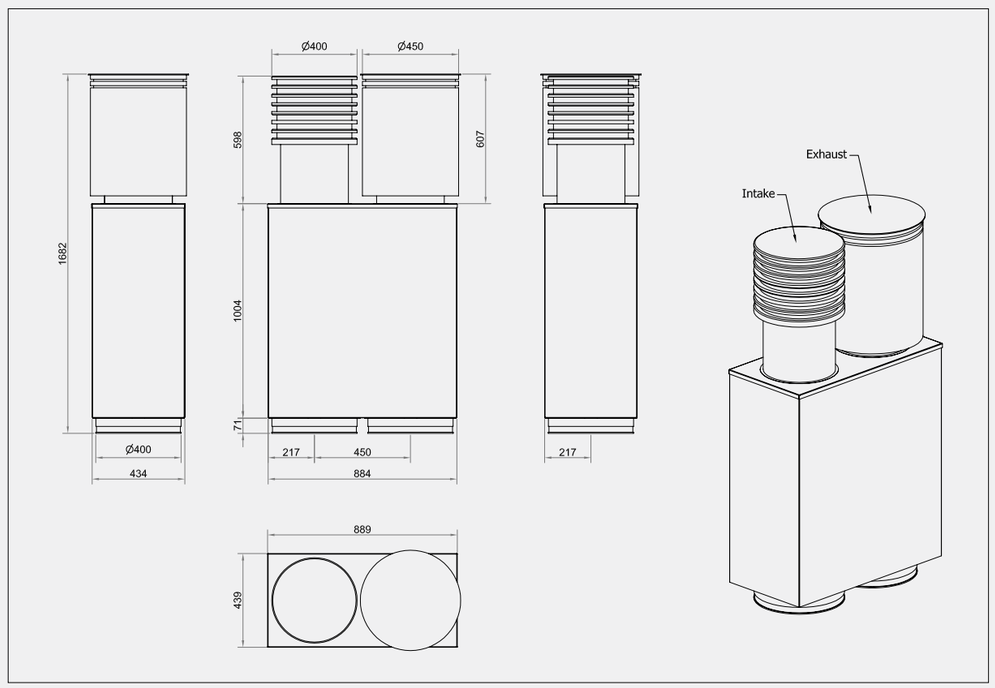
AMP 1200 VR



AMP 1200 VL

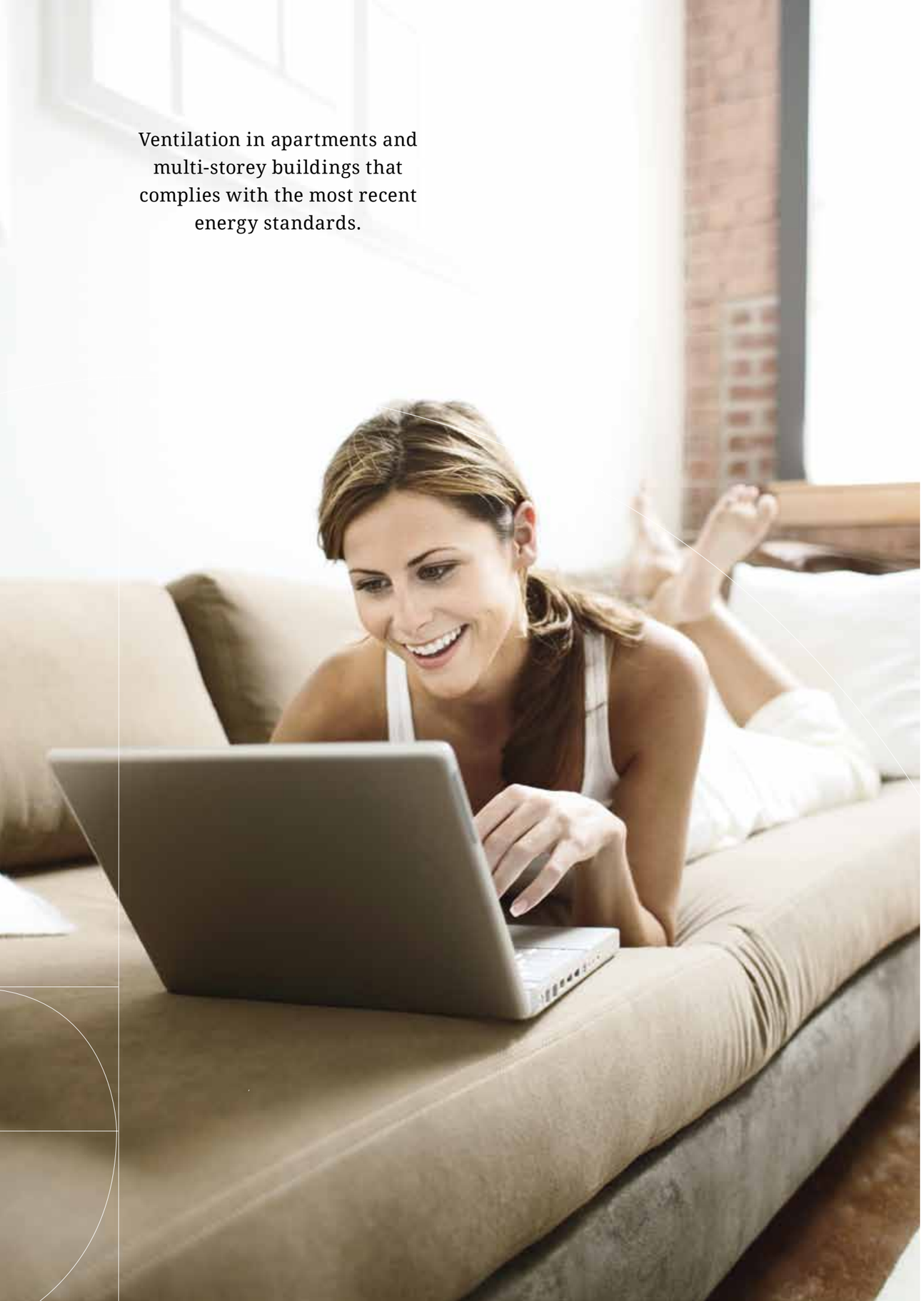


ROOF CAP Ø315



A panel box is available to conceal the intake and exhaust for the roof cap module. Standard colour: white.

Ventilation in apartments and multi-storey buildings that complies with the most recent energy standards.



CV 80

TECHNICAL DATA

Normal capacity at 30 dB(A)	80 m³/h
Electrical connection	1 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø125 mm
Weight	30 kg
Heat exchanger	Countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	RAL 9010 (white)
Current	0.16 A
Supply cable	1.5 mm²
Max. power consumption	19.5 W
Leakage current	≤ 1 mA

ELECTRIC COMFORT HEATING SURFACE (OPTION)

Electrical connection, internal	1 x 230 V
Heating capacity	500 W
Thermal cut-out, aut. reset	70°C
Thermal cut-out, man. reset	120°C

STANDARD AND OPTIONS	CV 80 V	CV 80 H
Bypass	x	x
Electric preheating surface	•	•
Electric comfort heating surface	–	–
Water heating surface (comfort heating)	–	–
CO_2-sensor (wall-mounted)	•	•
CO_2-sensor (integrated)	•	•
PIR/motion sensor	•	•
Electric humidity sensor	•	•
Condensate pump	x	x
Cooling module	–	–
Motorised exhaust damper	•	•
Motorised main damper	x	x
Countercurrent heat exchanger (alu)	x	x
Energy Meter	–	–

x : standard • : option – : not available

The CV 80 is for use in small dwellings, such as bedsits, student accommodation and senior apartments.

Use of the F7 fresh air filter provides balanced ventilation thanks to parameter adjustment. The F7 fresh air filter also reduces maximum air volume by around 4%.

CV 80

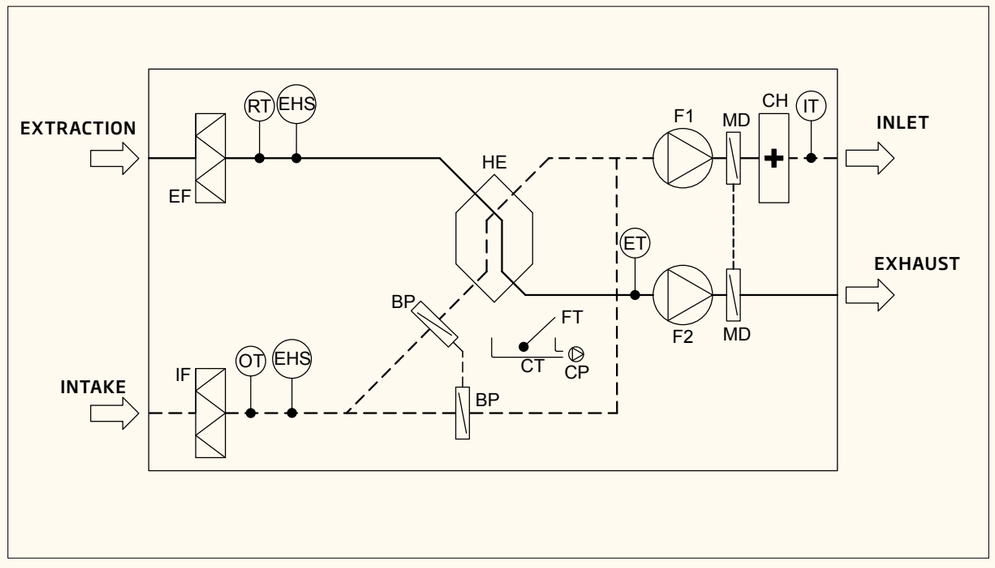
NOISE EFFECT LEVEL		Average frequency (Hz)								L_{WA}	L_{pA}/ 1 m distance
		63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**dB(A)**	**dB(A)**
STANDARD FLOW 80 m³/h 32 Pa back pressure	Case*	28	31	32	25	27.4	21.4	19.6	18.5	36.7	29.8
	Inlet**	45	49	49	39	41.6	31.1	23	16.4	53.3	
	Extraction**	36	42	42	36	29	12.1	0.1	-6.8	45.9	
	Intake**	43	48	48	33	26.1	12.3	6.63	4.02	51.8	
	Exhaust**	39	50	52	46	47.7	39.8	31.5	20.5	55.7	
MAXIMUM FLOW 90 m³/h 42 Pa back pressure	Case*	27	33	36	30	31	25.8	21.5	19.3	39.6	32.7
	Inlet**	49	54	55	45	45.1	37.2	31.4	23.1	58.8	
	Extraction**	38	45	46	40	31.6	16.7	4.73	-4.7	49.3	
	Intake**	46	52	52	38	28.7	16.6	10.7	7.88	55.6	
	Exhaust**	42	52	57	50	49.2	44.4	37	27.3	59.4	

* Noise effect level (A weighted average) for emissions from the case, measured in accordance with EN/ISO 3744

** Noise effect level (A weighted average) for emissions to duct, measured in accordance with EN/ISO 5136

Note: Sound data are not sensitive to changes in back pressure. Data for 1/3 octave bands can be obtained from Airmaster A/S.

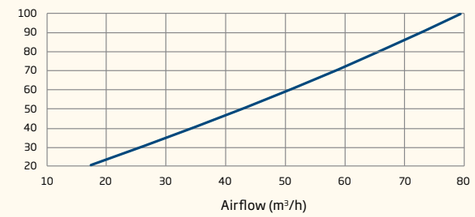
SCHEMATIC DIAGRAM



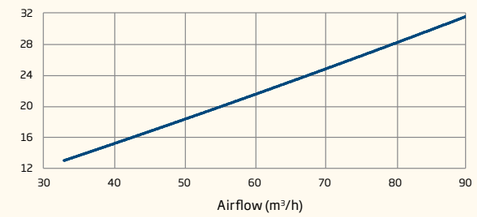
Name of component

F1	Inlet fan	BP	Bypass damper	FT	Float
F2	Exhaust fan	HE	Countercurrent heat exchanger	RT	Room temperature sensor
IF	Fresh air filter	EHS	Electric humidity sensor	OT	Outdoor temperature sensor
EF	Exhaust air filter	CH	Comfort heating surface	ET	Exhaust temperature sensor
MD	Main damper	CT	Condensate tray	IT	Inlet temperature sensor
		CP	Condensate pump		

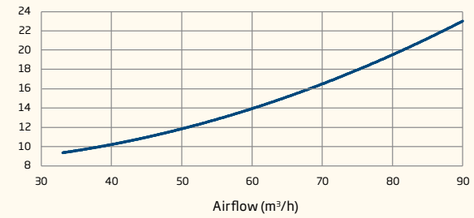
CAPACITY (%)



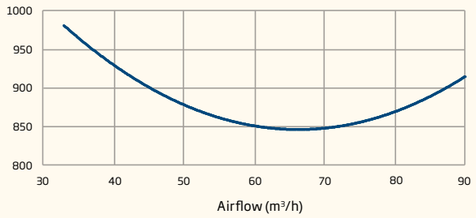
SOUND PRESSURE LEVEL (dB(A))



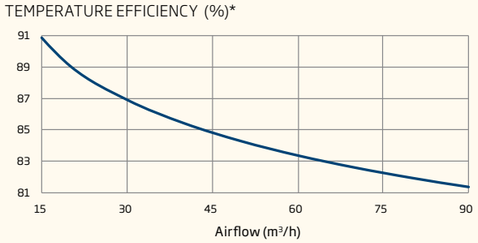
POWER CONSUMPTION (W)



SFP W/(m³/s)

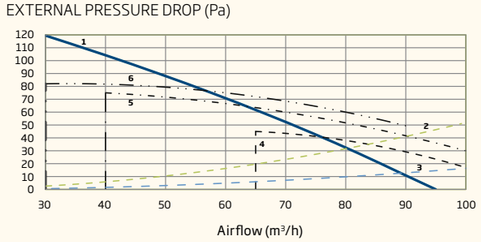


TEMPERATURE EFFICIENCY (%)*



* measured without condensation, if condensation is included, efficiency rises up to 95%.

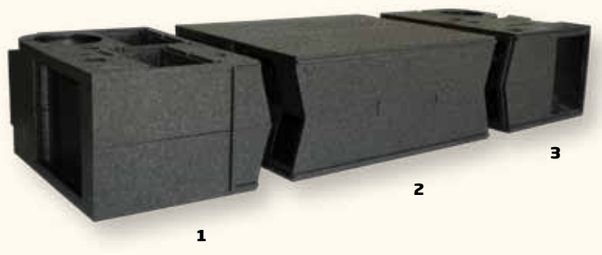
EXTERNAL PRESSURE DROP (Pa)



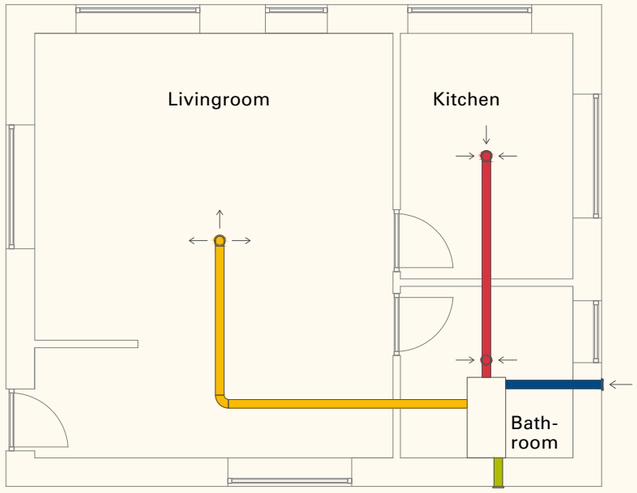
1: CV 80 (30 dB(A))
2: CV 80 ducts
3: Facade grille
4: 1000 W/(m³/s)
5: 1200 W/(m³/s)
6: 1400 W/(m³/s)

EPP CONSTRUCTION

The CV 80 consists of a complete EPP construction with three sections - a filter section (1), a heat exchanger section (2) and a motor section (3). All unit parts and components are fitted in or on the moulded EPP sections, which are then assembled in a sealed unit.



INSTALLATION OF **CV 80**



Intake
Inlet
Exhaust
Extraction

ONE BEDROOM APARTMENT

The CV 80 is installed above the ceiling in the bathroom.

Intake and exhaust through the wall grille in the exterior wall.

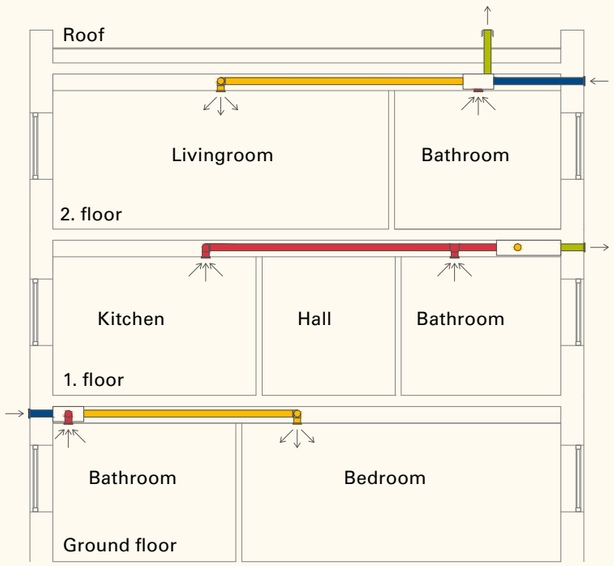
THREE-STOREY RESIDENTIAL BUILDING

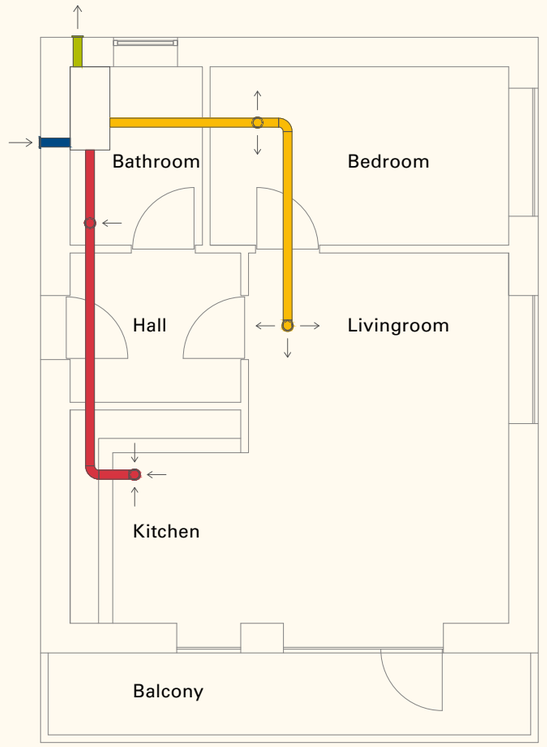
CV on 2nd floor installed with intake through facade grilles in external wall and exhaust through the roof.

CV with intake and exhaust through facade grilles in external wall on 1st and ground floors.

The ventilation units are installed above suspended ceilings with ducting for supply and extraction.

Supply and extraction are located in the rooms that require ventilation.





TWO BEDROOM APARTMENT

The CV 80 is installed above the ceiling in the bathroom.

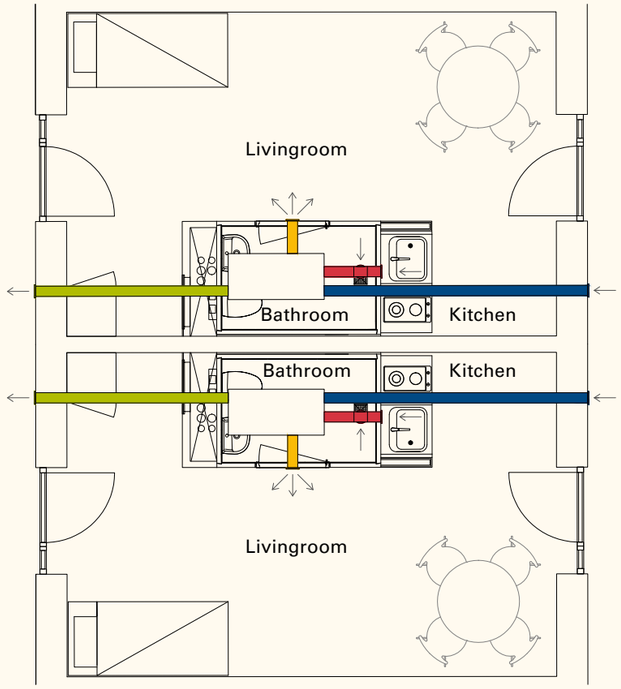
Intake and exhaust through the wall grille in the exterior wall.

ONE BEDROOM APARTMENTS

The CV 80 is installed above the ceiling in the bathroom.

Intake and exhaust through the wall grille in the exterior wall.

NB: Option for an inverted unit.



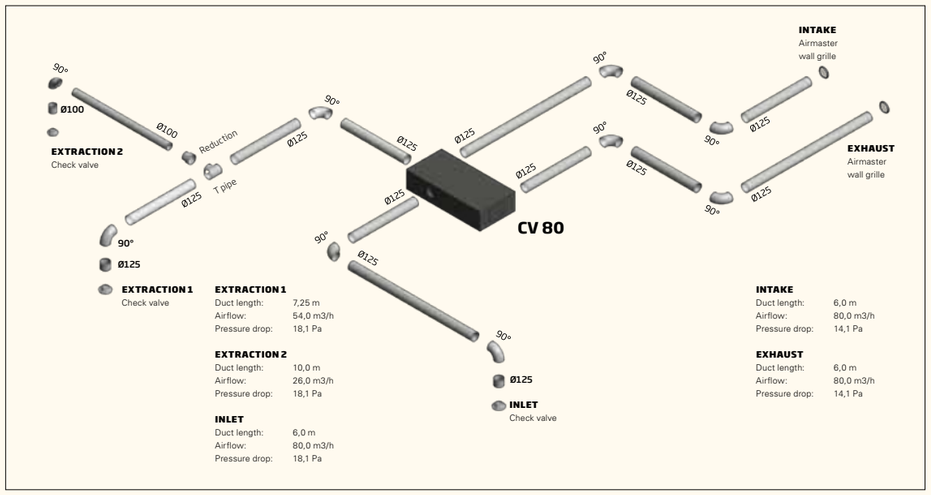
GUIDE
FOR ORDERING

TYPE	FLOW	EXTRACTION	INTAKE	EXHAUST	GRILLE
CV	80	R (right side)	B (back)	B (back)	G0 (standard) 2 x Ø125
		L (left side)	T (top)	T (top)	G1 (extraction grille) Ø125 + grille
			S (side)	S (side)	G2 (inlet flow grille) Grille + Ø125

One verison from each column can be selected.

FOR EXAMPLE:
A CV 80 is required with extraction from the room to the right, intake of fresh air through the wall behind the system and exhaust leading above the ceiling, ducts for both exhaust air and fresh air.
Product name = CV 80 R B T G0

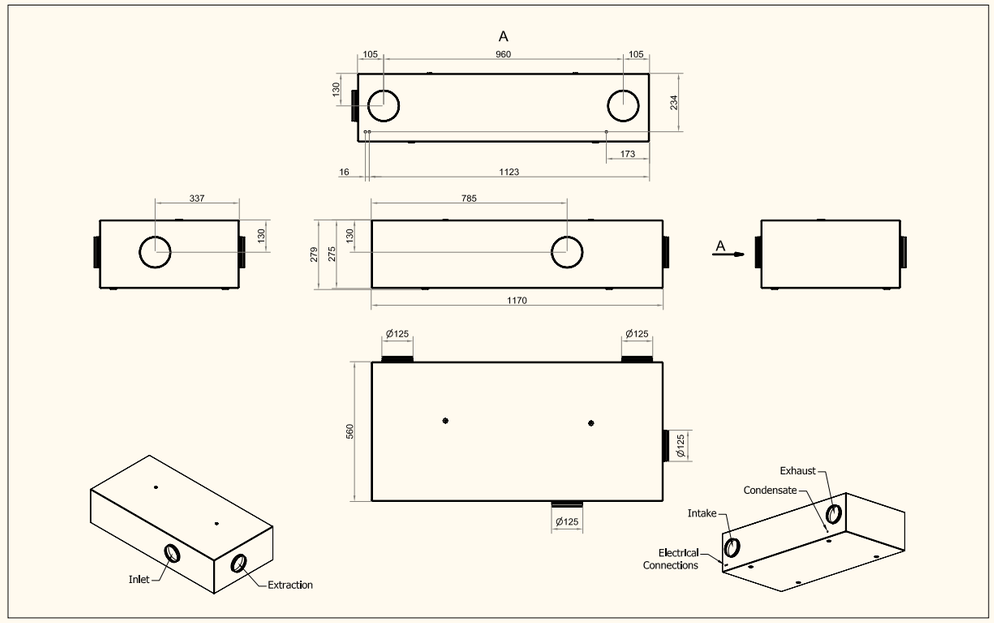
EXAMPLE 32 PA PRESSURE DROP - Ø125 / Ø100



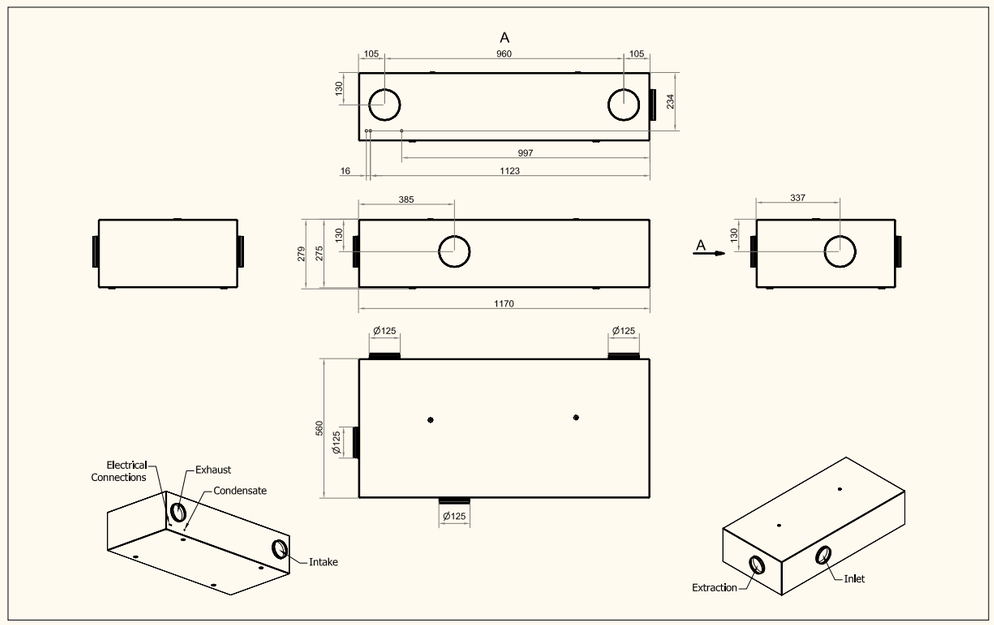
The demand for the energy consumption of transporting the air in the system must be low, which requires correctly dimensioning of the ducting.

CV 80

RBB EXTRACTION RIGHT - INTAKE BACK - EXHAUST BACK

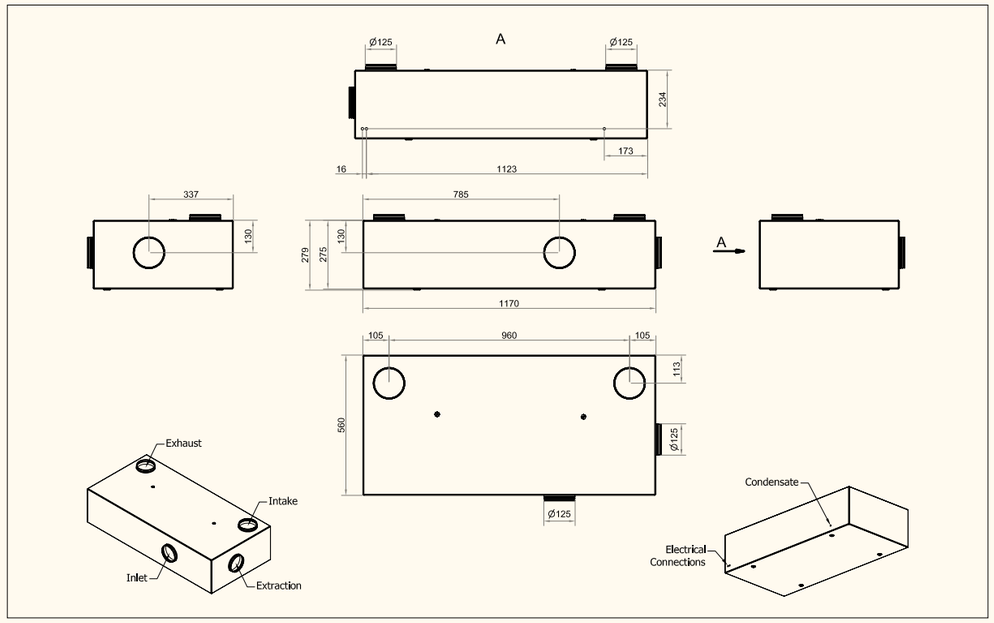


LBB EXTRACTION LEFT - INTAKE BACK - EXHAUST BACK

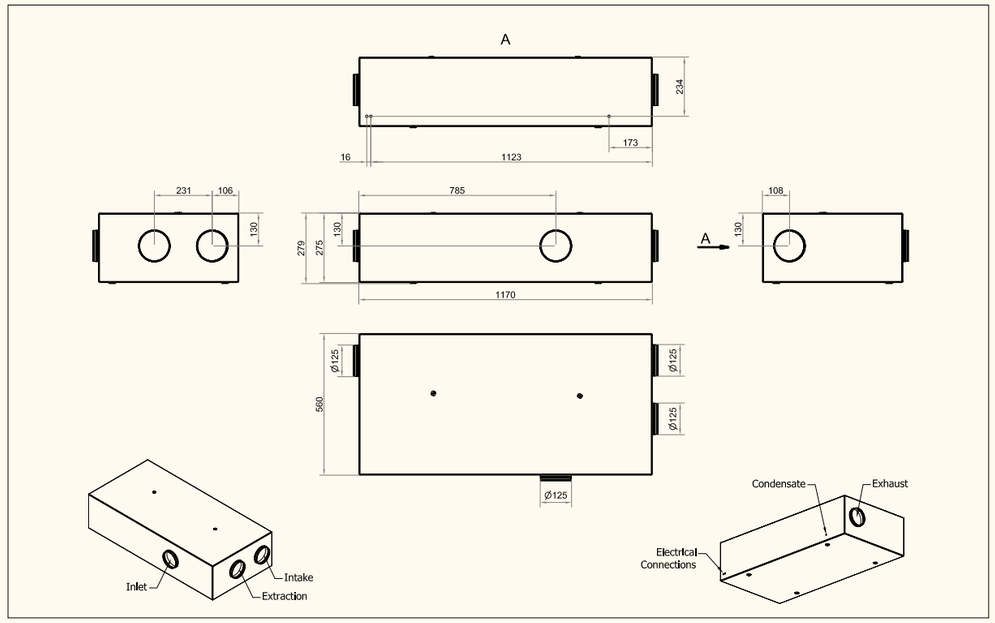


CV 80

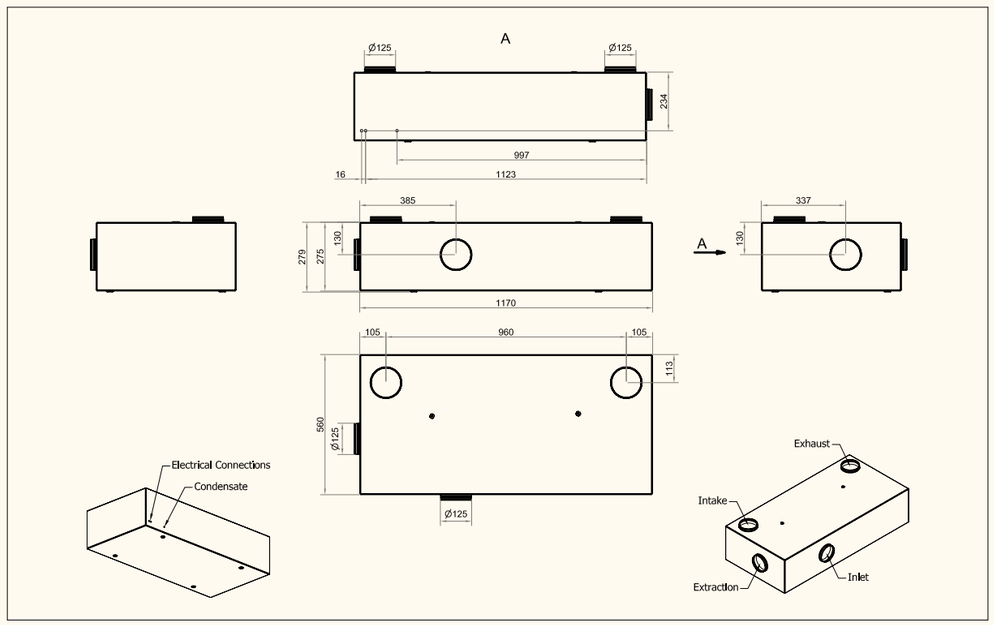
RTT EXTRACTION RIGHT - INTAKE TOP - EXHAUST TOP



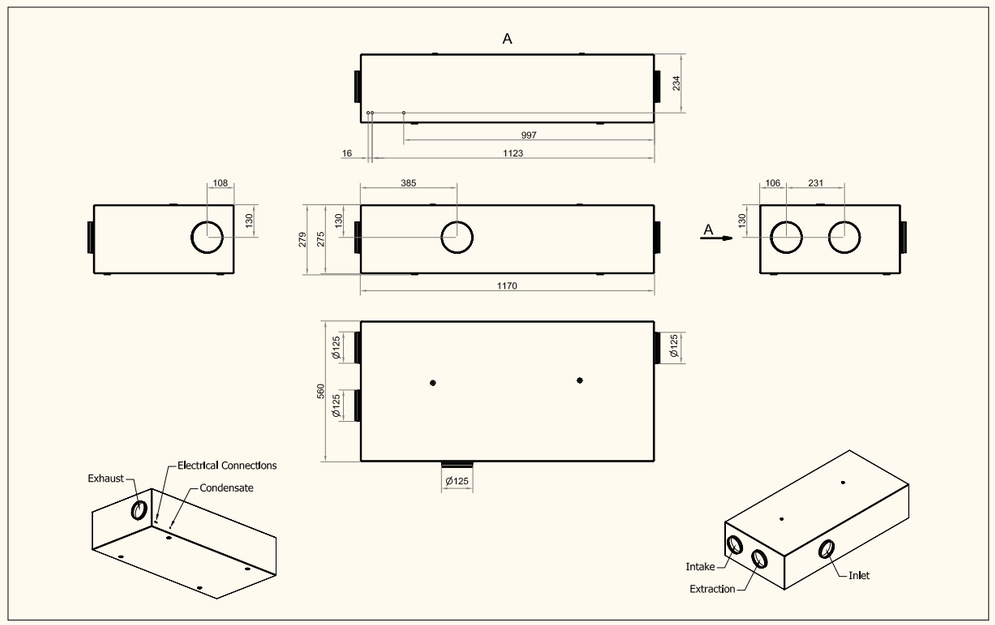
RSS EXTRACTION RIGHT - INTAKE SIDE - EXHAUST SIDE



LTT EXTRACTION LEFT - INTAKE TOP - EXHAUST TOP



LSS EXTRACTION LEFT - INTAKE SIDE - EXHAUST SIDE



Rising energy prices and better sealed buildings mean that we need mechanical ventilation with heat recovery in our homes.

CV 200

TECHNICAL DATA

Capacity:	CV 200 R	CV 200 L	CV 200 C
Maximum capacity at 50 Pa external pressure drop	250 m^3/h	342 m^3/h	342 m^3/h
Maximum capacity at 50 Pa external pressure drop and 1000 SFP W/(m^3/s)	250 m^3/h	273 m^3/h	285 m^3/h

Electrical connection	1 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø160 mm
Weight	R & L: 72 kg, C: 66 kg
Heat exchanger	Countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	RAL 9010 (white)
Current	1.2 A
Supply cable	1.5 mm^2
Max. power consumption	160 W
Leakage current	7 mA
Dimensions (L/H/D)	L, R: 1222 x 303 x 861 mm C: 1336 x 303 x 656 mm

ELECTRIC COMFORT HEATING SURFACE (OPTION)

Electrical connection, internal	1 x 230 V
Heating capacity	900 W
Thermal cut-out, aut. reset	70°C
Thermal cut-out, man. reset	120°C

WATER HEATING SURFACE (OPTION)

Max. operating temperature	90°C
Max. operating pressure	10 bar
Heating capacity	1000 W*
Pipe connection	1/2" (DN 15)
Material of pipes/louvres	Copper/aluminium
Opening/closing time, motorised valve	< 60 s

* Capacity at: supply/return temperature 60/40°C, water volume 43 L/h

STANDARD AND OPTIONS	MODEL R	MODEL L	MODEL C
Bypass	x	x	x
Electric preheating surface	•	•	•
Electric comfort heating surface	•	•	•
Water heating surface (comfort heating)	–	–	–
CO_2-sensor (wall-mounted)	•	•	•
CO_2-sensor (integrated)	•	•	•
PIR/motion sensor	•	•	•
Electric humidity sensor	•	•	•
Condensate pump	x	x	x
Cooling module	–	–	–
Motorised exhaust damper	•	•	•
Motorised main damper	•	•	•
Countercurrent heat exchanger (alu)	x	x	x
Energy Meter	–	–	–

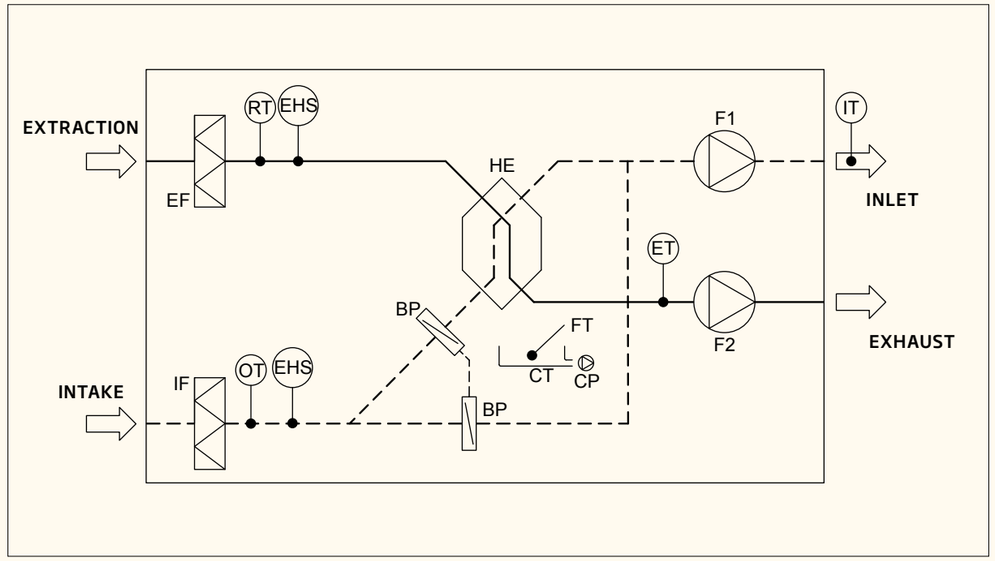
x : standard • : option – : not available

The CV 200 is the perfect ventilation unit for ventilating large apartments or homes of up to approx. 150 m^2.

It is available in three different models (R, L and C), each of which have 4 versions - a total of 12 variants of the CV 200.

CV 200

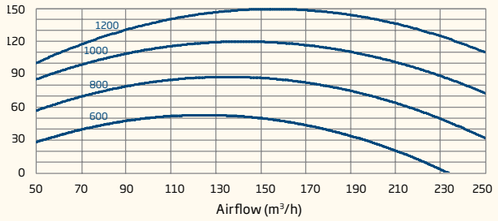
SCHEMATIC DIAGRAM



Name of component

F1	Inlet fan	BP	Bypass damper	FT	Float
F2	Exhaust fan	HE	Countercurrent heat exchanger	RT	Room temperature sensor
IF	Fresh air filter	EHS	Electric humidity sensor	OT	Outdoor temperature sensor
EF	Exhaust air filter	CT	Condensate tray	ET	Exhaust temperature sensor
		CP	Condensate pump	IT	Inlet temperature sensor

SFP - TYPE L & R - W/(M³/S)*



Add extra pressure loss for F7 inlet filter.

ΔP = 0,0004 · qv2 [Pa]; (qv=flow i m³/h)

Pressure loss (p) incl. F7 filter: p = pS + Dp [Pa]; ps pressure loss from diagram.

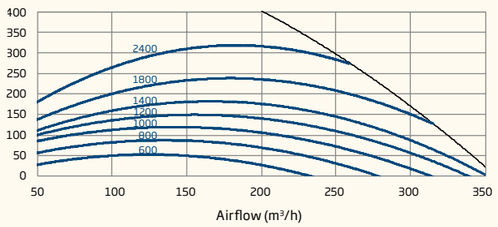
Power consumption (P):

P = SFP · qv/3600 [W]; (SFP from diagram and qv = flow in m³/h)

5% of SFP can be deducted for type C

* SFP measured at max. 150 Pa external pressure loss and 250 m³/h with F5 filters.

SFP - TYPE L & R - W/(M³/S)*



Add extra pressure loss for F7 inlet filter.

ΔP = 0,0004 · qv2 [Pa]; (qv=flow i m³/h)

Pressure loss (p) incl. F7 filter: p = pS + Dp [Pa]; ps pressure loss from diagram.

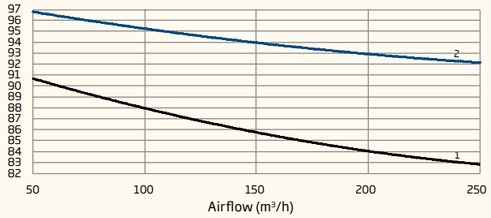
Power consumption (P):

P = SFP · qv/3600 [W]; (SFP from diagram and qv = flow in m³/h)

5% of SFP can be deducted for type C
Note: CV 200 type R is limited to 250 m³/h.

* SFP measured independent of external pressure loss and flow with F5 filters.

TEMPERATURE EFFICIENCY (%)



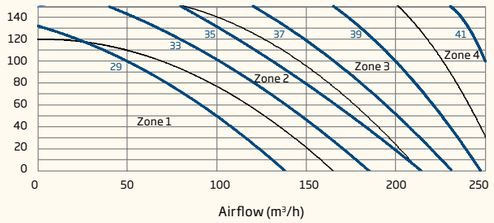
1: According to: EN308 (without condensation)

Conditions: Balanced operation
Indoor air: 25 °C 28 % RH
Outdoor air: 5 °C 50 % RH

2: With condensation

Conditions: Balanced operation
Indoor air: 25 °C 55 % RH
Outdoor air: -10 °C 50 % RH

SOUND ENERGY LEVEL - CABINET (dB(A))

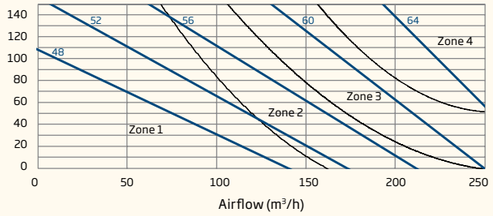


SOUND ENERGY LEVEL - CABINET $L_W = L_{WA} + K_W$

HZ	ZONE 1 K_W	ZONE 2 K_W	ZONE 3 K_W	ZONE 4 K_W
63	10	9	9	16
125	9	8	6	6
250	4	6	6	5
500	-5	-4	-3	-2
1000	-14	-15	-16	-14
2000	-12	-17	-19	-18
4000	-11	-16	-20	-21
8000	-10	-16	-19	-22

Sound energy level from the cabinet is stated according to: EN ISO 3744. Cabinet type C, add 0.7 dB to LwA

SOUND ENERGY LEVEL - PRESSURE SIDE (dB(A))

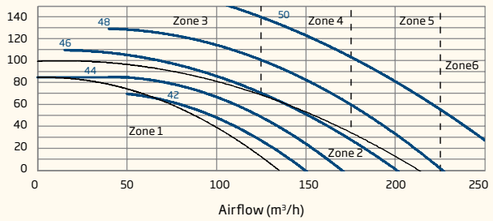


SOUND ENERGY LEVEL - PRESSURE SIDE $L_W = L_{WA} + K_W$

HZ	ZONE 1 K_W	ZONE 2 K_W	ZONE 3 K_W	ZONE 4 K_W
63	11	9	8	8
125	11	8	5	4
250	5	6	6	5
500	-2	-2	-2	-2
1000	-13	-13	-13	-12
2000	-18	-16	-15	-14
4000	-29	-26	-24	-22
8000	-36	-34	-29	-26

Sound energy level for ducts is stated according to: EN ISO 5136

SOUND ENERGY LEVEL - SUCTION SIDE (dB(A))



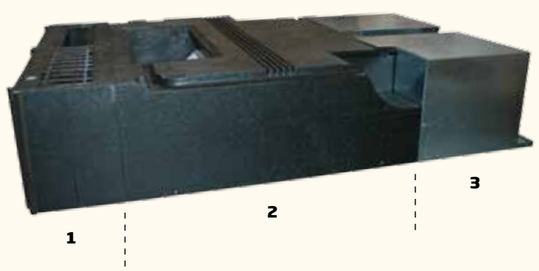
SOUND ENERGY LEVEL - SUCTION SIDE $L_W = L_{WA} + K_W$

HZ	ZONE 1 K_W	ZONE 2 K_W	ZONE 3 K_W	ZONE 4 K_W	ZONE 5 K_W	ZONE 6 K_W
63	14	14	13	14	14	16
125	15	14	14	13	12	12
250	3	5	4	6	6	6
500	-14	-14	-15	-13	-12	-12
1000	-31	-31	-33	-30	-27	-27
2000	-38	-39	-41	-38	-35	-34
4000	-43	-47	-51	-48	-43	-40
8000	-45	-49	-54	-53	-49	-44

Sound energy level for ducts is stated according to: EN ISO 5136

EPP CONSTRUCTION

The CV 200 consists of an EPP construction with two sections - a filter section (1) and a heat exchanger section (2). The motor section (3) is made of aluminium. All unit parts and components are fitted in or on the moulded EPP sections, which are then assembled in a sealed unit with the motor section.

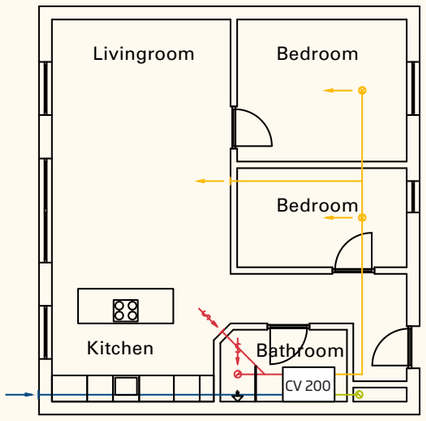


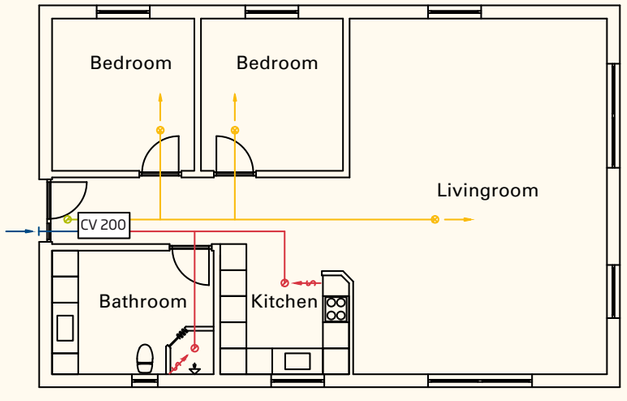
EXAMPLES OF **USE FOR CV 200**

The CV 200 is the perfect ventilation unit for ventilating large apartments or homes of up to approx. 150 m².

- Intake
- Exhaust
- Inlet
- Extraction

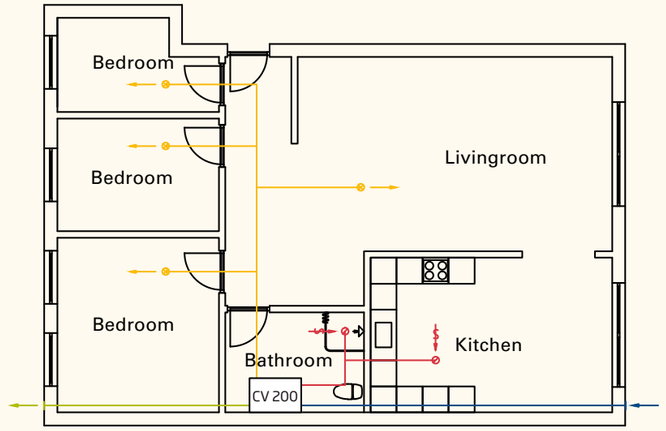
THREE ROOM APARTMENT
Intake via facade grille in outer wall. Exhaust via a shaft to an exhaust cap.





THREE ROOM APARTMENT
Intake via facade grille in outer wall. Exhaust ducted to an exhaust cap.

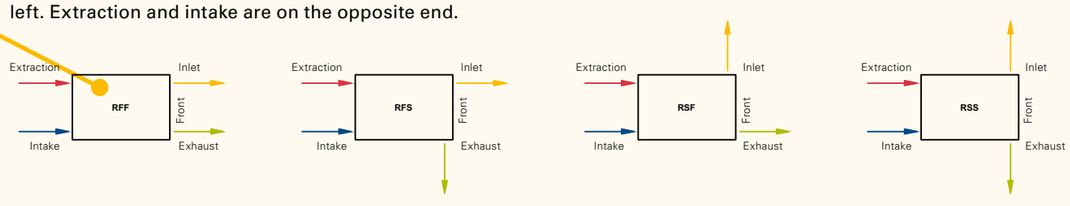
FOUR ROOM APARTMENT
Intake and exhaust pass through the outer wall, and are covered by a facade grille.



CV 200
INSTALLATION VERSIONS

On the **CV 200 L**, inlet and exhaust are placed at the same end of the unit, with inlet on the left and exhaust on the right. Extraction and intake are on the opposite end.

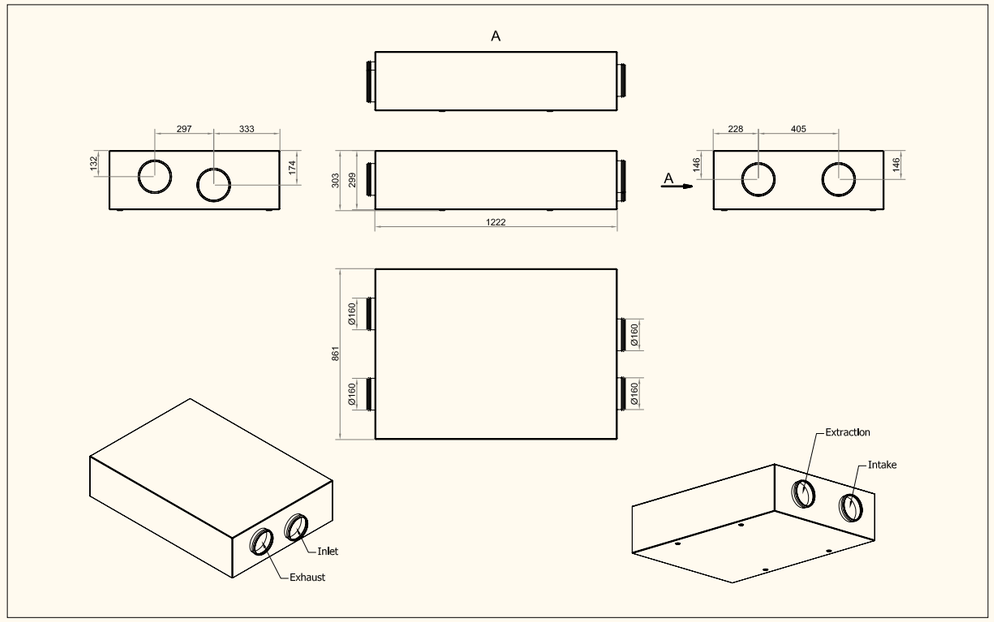
On the **CV 200 R**, inlet and exhaust are placed at the same end of the unit, with inlet on the right and exhaust on the left. Extraction and intake are on the opposite end.



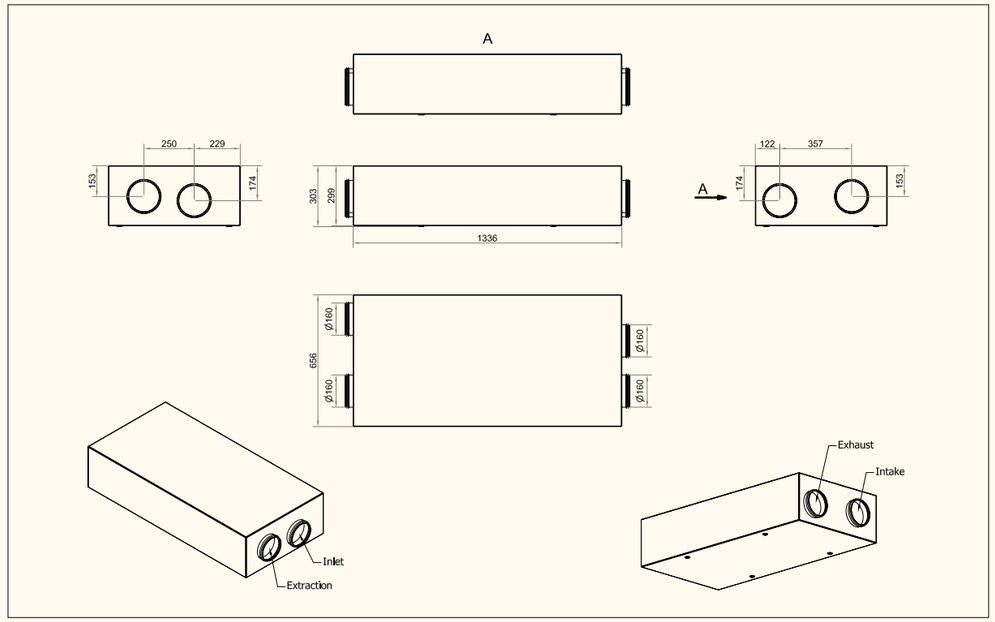
On the **CV 200 C**, inlet and extraction are placed at the same end of the unit, with inlet on the right and extraction on the left. Exhaust and intake are on the opposite end.

CV 200

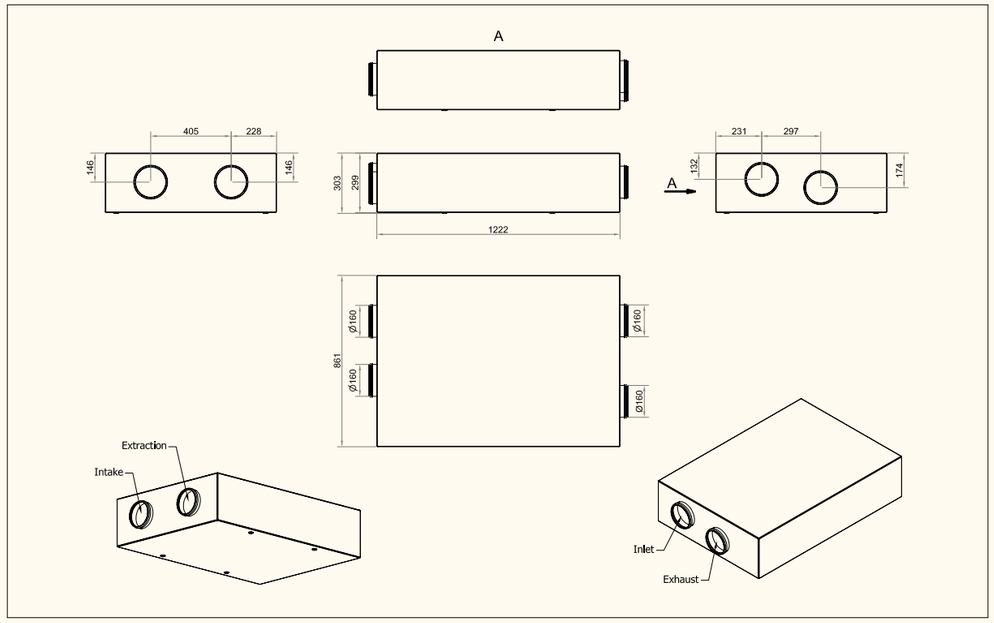
CV 200 R

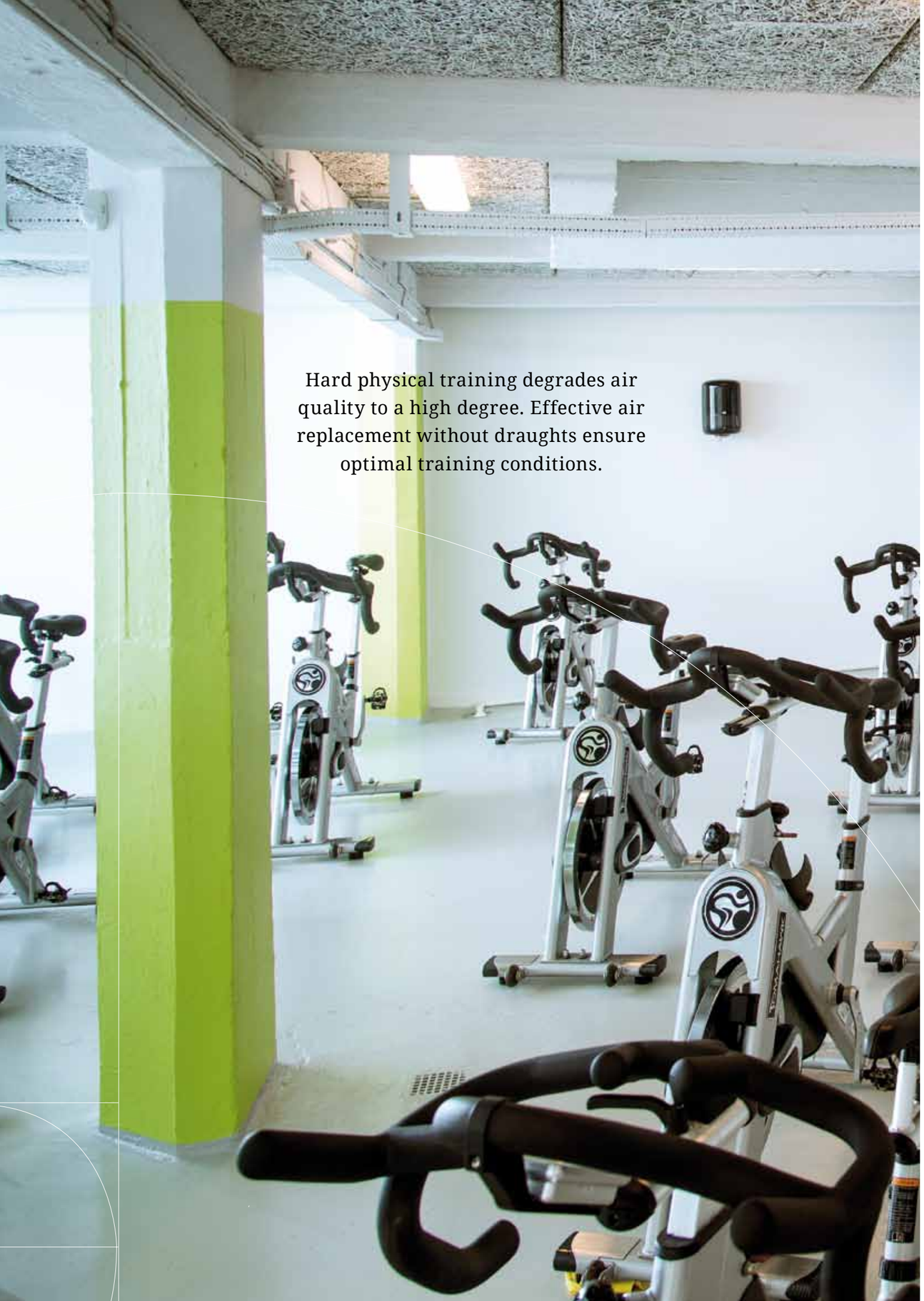


CV 200 C



CV200 L





CV 1000

TECHNICAL DATA

Capacity:	**CV 1000**
Maximum capacity at 50 Pa external pressure drop	1100 m^3/h
Maximum capacity at 50 Pa external pressure drop and 1000 SFP W/(m^3/s)	1011 m^3/h
Electrical connection without comfort heating surface	1 ~ 230 V + N + PE / 50 Hz
Electrical connection with comfort heating surface	3 ~ 230 V + N + PE / 50 Hz
Duct connection	Ø315 mm
Condensate drain	Ø16 mm
Weight	210 kg
Heat exchanger	Countercurrent exchanger (alu)
Filter	F5 standard, F7 option
Colour	RAL 9010 (white)
Current	2.6 A
Supply cable	1.5 mm^2
Max. power consumption	333 W
Leakage current	7 mA
Dimensions (L/H/D)	H: 1498 x 424 x 1384 mm S: 1512 x 501 x 1385 mm

ELECTRIC COMFORT HEATING SURFACE (OPTION)

Electrical connection, internal	1 x 230 V
Heating capacity	2500 W
Thermal cut-out, aut. reset	70°C
Thermal cut-out, man. reset	120°C

WATER HEATING SURFACE (OPTION)

Max. operating temperature	90°C
Max. operating pressure	10 bar
Heating capacity	2913 W*
Pipe connection	3/4" (DN 20)
Material of pipes/louvres	Copper/aluminium
Opening/closing time, motorised valve	< 60 s

* Capacity at: supply/return temperature 60/40°C, water volume 125 L/h

STANDARD AND OPTIONS	CV 1000
Bypass	x
Electric preheating surface	–
Electric comfort heating surface	•
Water heating surface (comfort heating)	•
CO_2-sensor (wall-mounted)	•
CO_2-sensor (integrated)	•
PIR/motion sensor	•
Hygrostat	•
Condensate pump	•
Cooling module	–
Motorised exhaust damper	•
Motorised main damper	•
Countercurrent heat exchanger (alu)	x
Energy Meter	•

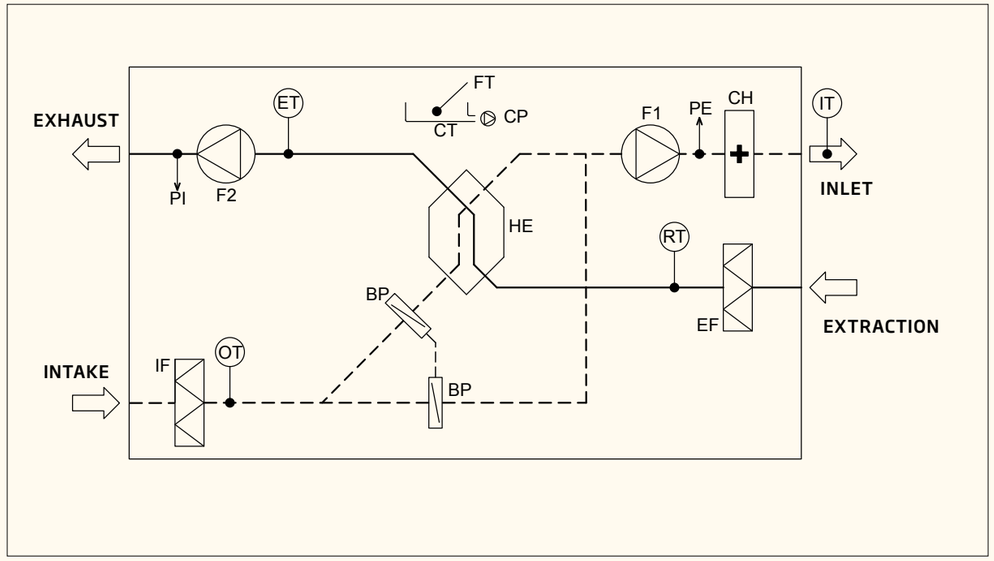
x : standard • : option – : not available

The CV 1000 is a compact, high pressure unit with low SFP value.

It is available in two variants - hinged or sliding doors. The option makes it suitable for either vertical or horizontal opening, depending on the type of ceiling and space available.

CV 1000

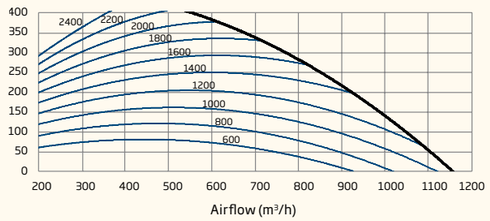
SCHEMATIC DIAGRAM



Name of component

F1	Inlet fan	HE	Countercurrent heat exchanger	OT	Outdoor temperature sensor
F2	Exhaust fan	CH	Comfort heating surface	ET	Exhaust temperature sensor
IF	Fresh air filter	CT	Condensate tray	IT	Inlet temperature sensor
EF	Exhaust air filter	CP	Condensate pump		
BP	Bypass damper	FT	Float		
		RT	Room temperature sensor		

SFP W/(m³/s)*



Add extra pressure loss for F7 inlet filter.

$\Delta P = 0{,}0222 \cdot q_v$ [Pa]; (q_v = flow i m³/h)

Pressure loss (p) incl. F7 filter: $p = p_s + \Delta p$ [Pa]

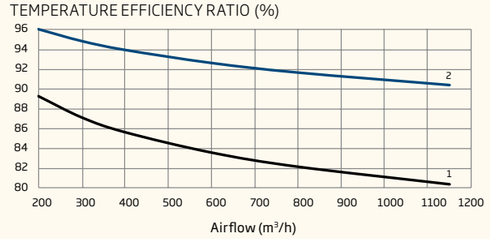
Power consumption (P):

$P = SFP \cdot q_v/3600$ [W];

(SFP from diagram and q_v = flow i m³/h)

* Specific electricity consumption for air transport.
Stated for both fans and control system.

TEMPERATURE EFFICIENCY RATIO (%)



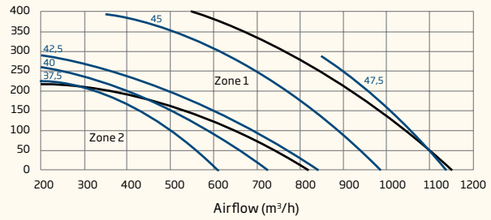
1: According to: EN308 (without condensation)

Conditions:	Indoor air:	25 °C	28 % RH
	Outdoor air:	5 °C	50 % RH

2: With condensation

Conditions:	Indoor air:	25 °C	55 % RH
	Outdoor air:	-10 °C	50 % RH

SOUND ENERGY LEVEL - CABINET (dB(A))

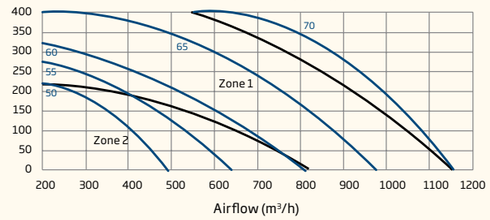


SOUND ENERGY LEVEL - CABINET $L_W = L_{WA} + K_W$

HZ	ZONE 1 K_W	ZONE 2 K_W
63	13	13
125	8	11
250	6	6
500	-7	-9
1000	-12	-16
2000	-14	-16
4000	-20	-18
8000	-20	-17

Sound energy level from the cabinet is stated according to: EN ISO 3744

SOUND ENERGY LEVEL - PRESSURE SIDE (dB(A))

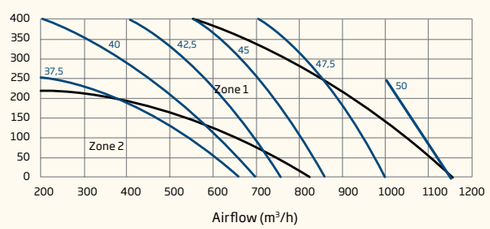


SOUND ENERGY LEVEL - PRESSURE SIDE $L_W = L_{WA} + K_W$

HZ	ZONE 1 K_W	ZONE 2 K_W
63	-4	-5
125	-9	-4
250	-5	-7
500	-12	-13
1000	-15	-16
2000	-13	-15
4000	-20	-22
8000	-20	-29

Sound energy level for ducts is stated according to: EN ISO 5136

SOUND ENERGY LEVEL - SUCTION SIDE (dB(A))



SOUND ENERGY LEVEL - SUCTION SIDE $L_W = L_{WA} + K_W$

HZ	ZONE 1 K_W	ZONE 2 K_W
63	-2	-2
125	-9	-7
250	-8	-9
500	-18	-19
1000	-21	-22
2000	-25	-28
4000	-36	-38
8000	-42	-49

Sound energy level for ducts is stated according to: EN ISO 5136

EXAMPLES OF **USE FOR CV 1000**

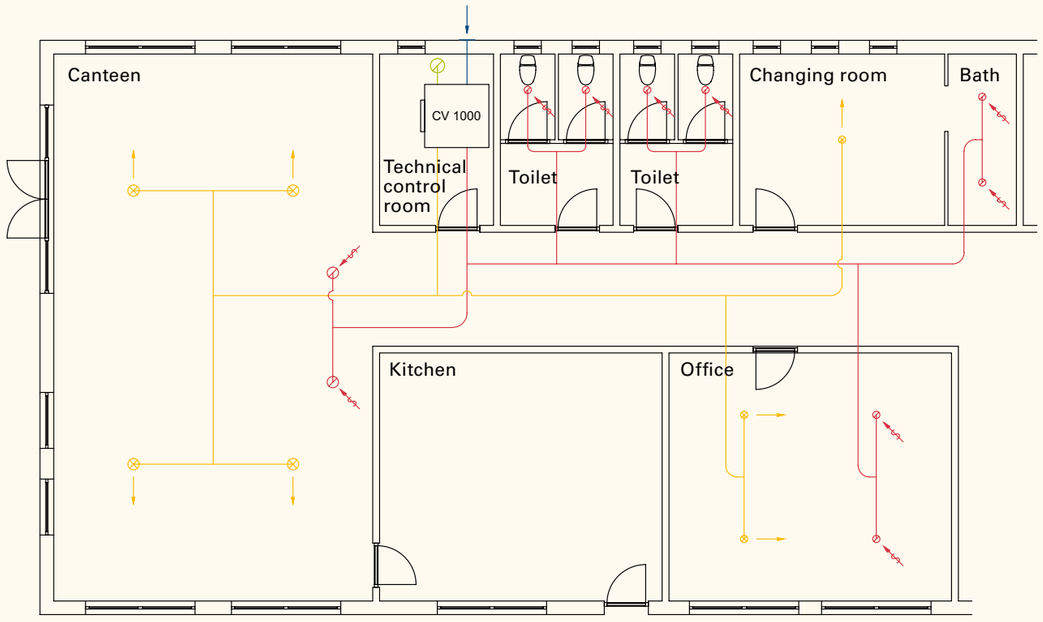
The CV 1000 is the perfect ventilation unit for ventilating large buildings, such as office buildings, schools or fitness centres.

OFFICE BUILDING
CV 1000 mounted on the ceiling in a plant room. Intake runs through a facade grille in the outer wall, with exhaust above roof level.

Air supplied to canteen, offices and changing rooms, and extraction from offices, canteen, showers and toilets.

Intake Inlet

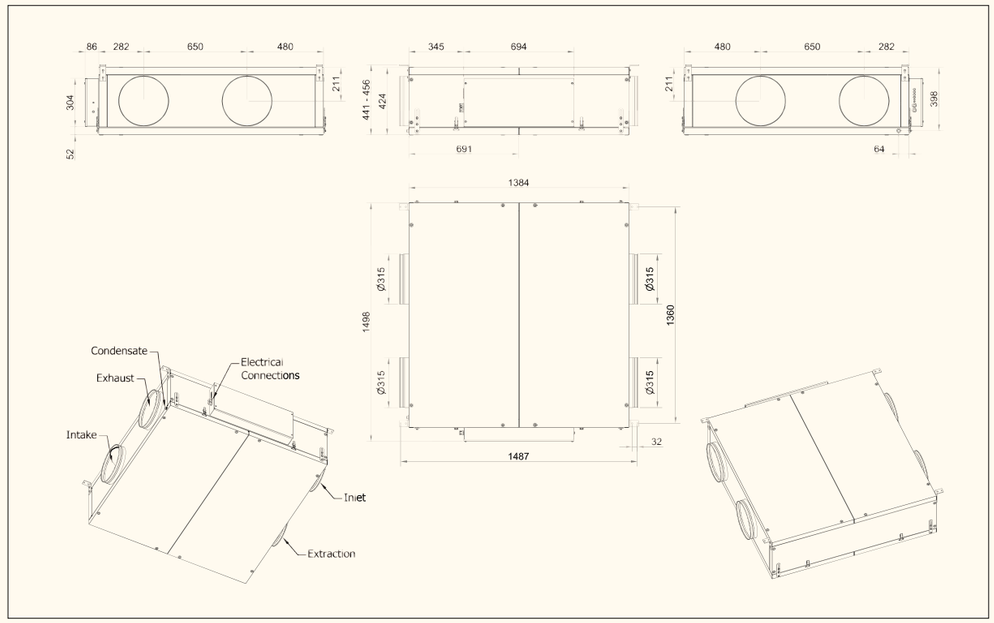
Exhaust Extraction



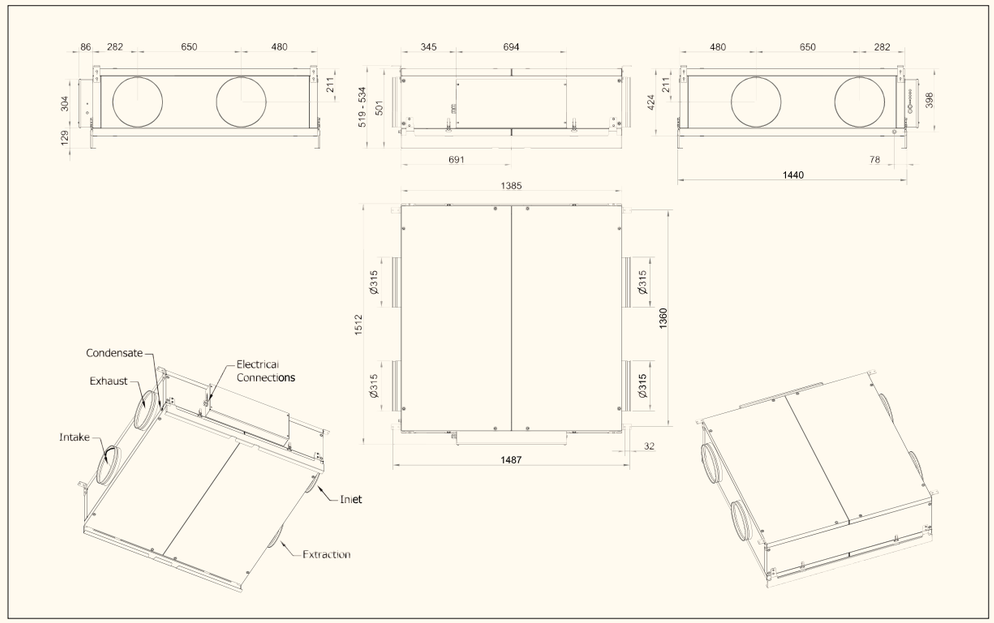
Duct dimensions, damper and silencers are not illustrated above.

CV 1000

CV 1000 H



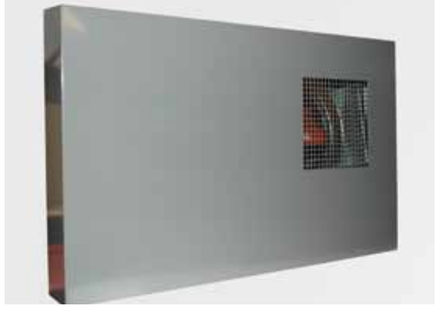
CV 1000 S



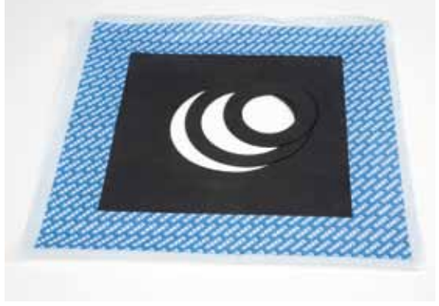
ROOF PENETRATION SHEATHING AND FITTINGS

FACADE GRILLES supplied with built-in birds net to protect against heavy rain.

SOUND ABSORBER used if there are special requirements for sound-proofing, e.g. in residential areas.



WALL COVER for AM 900. Used when intake and exhaust need to be located close together and ensures against external short circuiting.

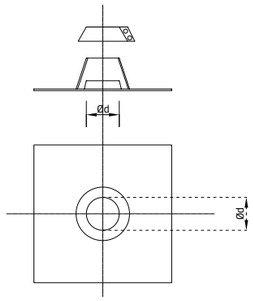


VAPOUR BARRIER MEMBRANE used around pipes for wall or roof ducts. Ensures tight vapour membrane after ducting.

CEILING BRACKETS to secure unit directly on the ceiling as support if the unit cannot be placed on the wall alone.

ADJUSTABLE CEILING BRACKETS which is height-adjustable.

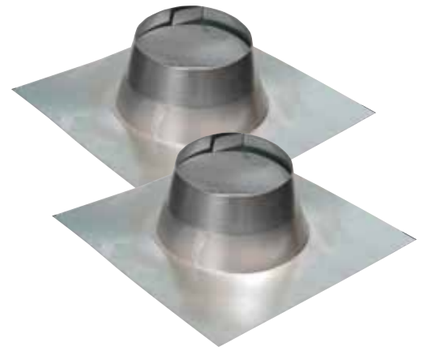
ROOF FLASHING



	Ød
AML 100 / CV 80	250
CV 200	260
AML 300 / AMP 300	315
AML 500 / AMP 500	355
AML 800 / AMP 800 AMP 900 / AMP 1200 CV1000	450
AMP 1200	500

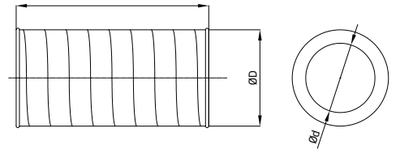
Ød = internal diameter
Roof flashing is available in galvanised metal or as grey Perform sheeting; both come with a galvanised metal pipe collar

Also available in black, at extra charge.



INSULATED PENETRATION DUCTING

L = AMP 900 / AMP 1200 depending on pitch

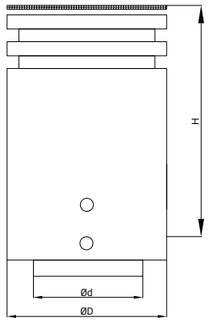


	Ød	ØD
AML 100 / CV 80	125	250
CV 200	160	260
AML 300 / AMP 300	200	315
AML 500 / AMP 500	250	355
AML 800 / AMP 800 AMP 900 CV 1000	315	450
AMP 1200	400	500

Ød = internal diameter · ØD = external diameter
The insulated penetration ducting has a minimum of 50 mm insulation.
The length of the penetration ducting depends on the pitch of the roof:
Pitch 0°-30° = length 900 mm · Pitch 31°-45° = length 1200 mm

Also available in black, at extra charge.

EXHAUST CAP



	Ød	ØD	H
AML 100 / CV 80	125	250	230
CV 200	160	260	310
AML 300 / AMP 300	200	315	380
AML 500 / AMP 500	250	355	437
AML 800 / AMP 800 AMP 900 CV 1000	315	450	540
AMP 1200	400	500	700

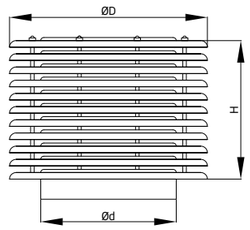
Ød = internal diameter ØD = external diameter H = height
NB: The height dimensions indicated are to the upper edge of the lowest hole.
The exhaust cap has the same external dimensions as Airmaster's insulated pipework, providing an optimum fit.

Also available in black, at extra charge.

ROOF PENETRATION KIT

A full roof penetration kit consists of 2 pieces of insulated penetration ducting, 2 roof flashing items, 1 exhaust cap, 1 louvred cap, 2 connectors and 3 metres of spiral pipe.

LOUVRED CAP



	Ød	ØD	H
AML 100 / CV 80	125	250	130
CV 200	160	260	160
AML 300 / AMP 300	200	315	160
AML 500 / AMP 500	250	355	191
AML 800 / AMP 800 AMP 900 Cv 1000	315	450	222
AMP 1200	400	500	284

Ød = internal diameter · ØD = external diameter · H = height
The louvred cap has the same external dimensions as Airmaster's insulated pipework, providing an optimum fit.

Also available in black, at extra charge.

ROOF CAP UNIT

AMP 900 / AMP 1200	Ød	ØD	H	H x B x D
Exhaust cap	315	450	540	-
Louvred cap	315	450	540	-
Box AMP 900	-	-	-	1000x950x500
Box AMP 1200	-	-	-	1004x884x434

On roofing felt with a pitch of 0-30°, a so-called roof cap unit should be used for the AMP 900 vertical model and AMP 1200 vertical model. Here the exhaust and louvred caps are integrated in a box.

Remember to specify the roof pitch when ordering.

TECHNICAL
DATA SUMMARY

AM L		100	300	500	800
Capacity at 35 dB(A) (max.)	m³/h	100	300	550	725
Capacity at 30 dB(A) (max.)	m³/h	75	240	430	650
Throw (max.)	m	5.5	6.5	7.5	8.1
Weight (ventilation unit without options)	kg	42	49.8	100.6	147
Colour, panels	RAL	9010	9010	9010	9010
Colour, case	RAL	7024	7024	7024	7024
Dimensions (L/H/D)	mm	1170/246/569	1274/333/578	1600/439/779	1910/474/916
Voltage (unit)	V	1~230	1~230	1~230	1~230
Frequency	Hz	50	50	50	50
Power consumption (max.)	W	27.5	100	132	156
Current	A	0.15	0.6	1.1	1.1
Power factor		0.54	0.56	0.58	0.56
Leakage current (max.)	mA	≤1	≤3	≤6	≤6
Fuse rating (max.)	A	20	20	20	20
ELECTRIC HEATING SURFACE					
Thermal cut-out, aut. reset	°C	70	70	70	70
Thermal cut-out, man. reset	°C	120	120	120	120
Capacity: electric comfort heating surface	W	500	1500	630	1000
Current	A	2.2	6.5	2.6	4.4
Capacity: electric preheating surface	W	-	-	1000	1500
Current	A	-	-	4.4	6.5
WATER HEATING SURFACE					
Capacity at flow/return temperature of 70/40°C	W	-	343	686	943
Operating temperature (max.)	°C	-	90	90	90
Operating pressure (max.)	bar	-	10	10	10
Connection dimension		-	3/8"/DN10	3/8"/DN10	1/2" (DN 15)
Material		-	Copper / Aluminium	Copper / Aluminium	Copper / Aluminium
Opening/closing time of motorised valve	s	-	60	60	60
CONDENSATE PUMP					
Output	l/h	10	10	10	10
Pump head	m	6	6	6	6

AM P		300	500	800	900	1200
Capacity at 35 dB(A) (max.)	m³/h	300	550	725	830	1310
Capacity at 30 dB(A) (max.)	m³/h	240	430	650	690	1050
Throw (max.)	m	6.5	7.5	8.1	12	9.5
Weight (ventilation unit without options)	kg	49.8	100.6	147	180	545/630
Dimensions designpanels	mm	-	-	-	-	600x500 1200x1000
Colour, panels	RAL	9010	9010	9010	9010	9010
Colour, case	RAL	7024	7024	7024	7024	7024
Dimensions (L/H/D)	mm	1274/333/578	1600/439/779	1910/474/916	800/2323/588	2427/2098/496
Min. room height for horizontal intake/exhaust	mm	-	-	-	2400	2400
Min. room height for vertical intake/exhaust	mm	-	-	-	2400	2500
Voltage (unit)	V	1~230	1~230	1~230	1~230	1~230/ 3~230
Frequency	Hz	50	50	50	50	50
Power consumption (max.)	W	100	132	156	240	254
Current	A	0.6	1.1	1.1	1.8	1.4
Power factor		0.56	0.58	0.56	0.60	0.60
Leakage current (max.)	mA	≤3	≤6	≤6	≤6	≤9
Fuse rating (max.)	A	20	20	20	20	20/3x20
ELECTRIC HEATING SURFACE						
Thermal cut-out, aut. reset	°C	70	70	70	70	70
Thermal cut-out, man. reset	°C	120	120	120	120	120
Capacity: electric comfort heating surface	W	1500	630	1000	1050	1670
Current	A	6.5	2.6	4.4	4.4	7.3
Capacity: electric preheating surface	W	-	1000	1500	1500	-/ 2500
Current	A	-	4.4	6.5	6.5	-/10.9
WATER HEATING SURFACE						
Capacity at flow/return temperature of 70/40°C	W	343	686	943	991	2109
Operating temperature (max.)	°C	90	90	90	90	90
Operating pressure (max.)	bar	10	10	10	10	10
Connection dimension		3/8"/DN10	3/8"/DN10	1/2" (DN 15)	1/2" (DN 15)	3/4"(DN 20)
Material		Copper / Aluminium	Copper / Aluminium	Copper / Aluminium	Copper / Aluminium	Copper / Aluminium
Opening/closing time of motorised valve	s	60	60	60	60	60
CONDENSATE PUMP						
Output	l/h	10	10	10	10	10
Pump head	m	6	6	6	6	6

TECHNICAL
DATA SUMMARY

CV		80	200	1000
Capacity at 30 dB(A) (max.)	m^3/h	80	R:250, L&C: 342	1100
Weight (ventilation unit without options)	kg	30	R&L: 72, C: 66	210
Colour, case	RAL	9010	9010	9010
Dimensions (L/H/D)	mm	1170x275x560	R&L: 1222x303x861 C: 1336x303x656	H:1498x424x1384 S:1512x501x1385
Voltage (unit)	V	1~230	1~230	1~230
Frequency	Hz	50	50	50
Power consumption (max.)	W	19.5	160	333
Current	A	0.16	1.2	2.6
Power factor		0.60	0.60	0.60
Leakage current (max.)	mA	≤1	≤7	≤7
Fuse rating (max.)	A	20	20	25
ELECTRIC COMFORT HEATING SURFACE				
Thermal cut-out, aut. reset	°C	70	70	70
Thermal cut-out, man. reset	°C	120	120	120
Capacity	W	500	900	2500
Current	A	2.2	3.9	10.9
CONDENSATE PUMP				
Output	l/h	10	10	10
Pump head	m	6	6	6

CC COOLING MODULE		300	500	800
Cooling capacity (max.)	W	2314	4065	5622
Refrigerant		R407c	R407c	R407c
Filling	kg	0.575	0.700	0.950
Operating current	A	3.6	4.4	10.8
Power consumption	W	868	1033	1991
Duct connection	mm	Ø200	Ø250	Ø315
Condensate drain	mm	Ø16	Ø16	Ø16
De-icing interval	h	2	2	2
De-icing period		5°C or 10 minutes	5°C or 10 minutes	5°C or 10 minutes
Weight	kg	55	71.4	86
Dimensions incl. unit (L/H/D)	mm	1274 / 333 / 972	1600 / 432 / 1149	1910 / 467 / 1336
COP value		2.6	4.2	2.82
Leakage current	mA	≤ 2	≤ 2	≤ 2

AIRMASTER

Industrivej 59
DK - 9600 Aars
Denmark

Tel. +45 98 62 48 22
Fax. +45 98 62 57 77
info@airmaster.dk

www.airmaster.dk

SAV United Kingdom Ltd.
Scandia House, Boundary Road
Woking, Surrey GU21 5BX

Tel. +44 (0) 1483 771 910
Fax. +44 (0) 1483 227 519
info@sav-systems.com

www.sav-systems.com